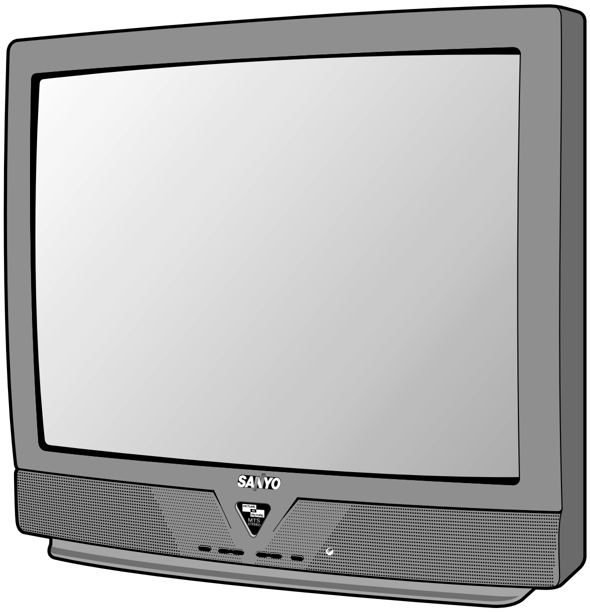
FILE NO.

SERVICE MANUAL

Remote Control Color Television

DS31810 (U.S.A.)

ORIGINAL VERSION



Chassis No. 31810-00

NOTE: Match the Chassis No. on the unit's back cover with the Chassis No. in the Service Manual.

If the Original Version Service Manual Chassis No. does not match the unit's, additional Service Literature is required. You **must** refer to "Notices" to the Original Service Manual prior to servicing the unit.

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Specifications

Power Rating	120V, 60Hz 89W (Avg), 2.5A (Max)
Antenna Input Impedance	75Ω UHF/VHF/CATV
Receiving Channel	2 - 13 (VHF), 14 - 69 (UHF), 01, 14-94, 95-125 (CATV)
Remote Ready	43 Key Remote Control
Sound Output	1.0 W/CH
Intermediate Frequency	
Picture IF Carrier	45.75MHz
Sound IF Carrier	41.25MHz
Color Sub Carrier	42.17MHz
Picture Tube	M78JUA361X72
Semiconductors	
Integrated Circuits	13
Transistors	52
	Except within Tuner and RC Pre-Amp.
Cabinet Dimensions	
Width	762mm
Height	707mm
Depth	539mm

DS31810, G7GAM, PRODUCT CODE 111357180

REFERENCE No. SM780075

SAFETY INSTRUCTIONS

SAFETY PRECAUTIONS

WARNING: The chassis of this receiver has a floating ground with the potential of one half the AC line voltage in respect to earth ground. Service should not be attempted by anyone not familiar with the precautions necessary when working on this type of equipment.

The following precautions must be observed:

1. An isolation transformer must be connected in the power line between the receiver and the AC line before any service is performed on the receiver.

2. Comply with all caution and safety-related notes provided on the side of the cabinet, inside the cabinet, on the chassis, and the picture tube.

3. When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as control knobs, adjustment covers, shields and barriers.

   DO NOT OPERATE THIS TELEVISION RECEIVER WITHOUT THE PROTECTIVE SHIELD IN POSITION AND PROPERLY SECURED.

4. Before replacing the back cover of the set, thoroughly inspect the inside of the cabinet to see that no stray parts or tools have been left inside.
   Before returning any television to the customer, the service technician must perform the following safety checks to be sure that the unit is completely safe to operate without danger of electrical shock.

ANTENNA COLD CHECK

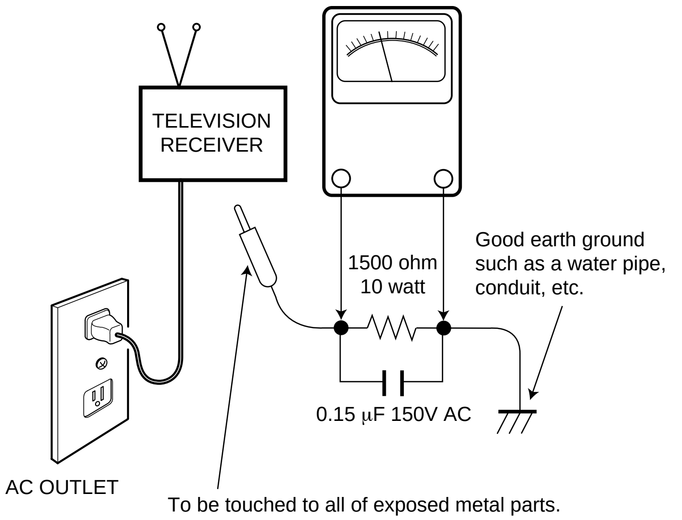
Remove AC plug from the 120 VAC outlet and place a jumper across the two blades. Connect one lead of an ohmmeter to the jumpered AC plug, and touch the other lead to each exposed antenna terminal (UHF and VHF antenna terminals). The resistance must measure between 1M ohm and 5.2M ohm. Any resistance value below or above this range indicates an abnormality which requires corrective action.

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120 VAC outlet. (Do not use an isolation transformer for this check.) Use an AC voltmeter, that has 5000 ohms per volt or more sensitivity. Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 µF 150 VAC capacitor, between a known good earth ground (water pipe, conduit, etc.) and all exposed metal parts of the cabinet (antennas, handle bracket, metal cabinet, screw heads, metal overlays, control shafts, etc.). Measure the AC voltage across the 1500 ohm resistor. The AC voltage should not exceed 750 mV. A reading exceeding 750 mV indicates that a dangerous potential exists. The fault must be located and corrected. Repeat the above test with the receiver power plug reversed.

NEVER RETURN A RECEIVER TO THE CUSTOMER WITHOUT TAKING THE NECESSARY CORRECTIVE ACTION.

READING SHOULD NOT EXCEED 750 mV.
AC VOLTMETER
(5000 ohms per volt or more sensitivity)



To be touched to all of exposed metal parts.
Voltmeter Hook-up for Leakage Current Check.

X-RADIATION PRECAUTION

The primary source of X-RADIATION in solid-state receivers is the picture tube. The picture tube is specially constructed to limit X-Ray emission. For continued X-RADIATION protection, the replacement tube must be the same type as the original (including the suffix letter in the part numbers). Excessive high voltage may produce potentially hazardous X-RADIATION. To avoid such hazards, the high voltage must be maintained within specific limits. Refer to the X-RADIATION WARNING NOTE on the CHASSIS SCHEMATIC in this service manual for specific high voltage limits. If the high voltage exceeds specified limits, check the components specified on the chassis schematic diagram and take the necessary corrective action. Carefully follow the instructions for the +B Voltage Check and the High Voltage Check to maintain the high voltage within the specified limits.

HIGH VOLTAGE HOLD-DOWN TEST

To prevent X-RADIATION from the picture tube due to excessive high voltage, a HOLD-DOWN circuit is provided in the high voltage circuit. Every time the receiver is serviced, the high voltage HOLD-DOWN circuit must be tested for proper operation. Refer to the HIGH VOLTAGE HOLD-DOWN TEST in service adjustments.

PRODUCT SAFETY NOTICE

When replacing components in a receiver, always keep in mind the necessary product safety precautions. Pay special attention to the replacement of components marked with a star (★) in the parts list and in the schematic diagrams. To ensure safe product operation, it is necessary to replace those components with the exact same PARTS.

SERVICE ADJUSTMENTS

GENERAL

This set has an On-screen Service Menu system included in the CPU that allows remote operation for most of the service adjustments.

IC802 (EEPROM) REPLACEMENT

When IC802 (EEPROM) is replaced, IC801 (CPU) will automatically write the initial reference data into IC802 for basic TV operation. However, the bus data should be checked and some bus data should be set up before attempting the service adjustments. (See pages 4 – 5 for detailed information.)

INITIAL BUS DATA SETUP

Note: When IC802 (EEPROM) is replaced, the Service Menu NO. 01 HP (H Phase), NO. 14 AF (Auto Flesh), NO. 21 GD (Green Drive Reduction), NO. 24 AG (AFC Gain), NO. 26 SCO (Sub Color), NO. 27 STI (Sub Tint), NO. 28 SSH (Sub Sharpness), NO. 29 OPT (Option 1), NO. 30 OP2 (Option 2), NO. 31 HR (OSD Display H Position), NO. 38 SBO (Sub Bright Offset), NO. 39 PCO (PIP Color), NO. 40 PTI (PIP Tint), and NO. 45 PCN (PIP Contrast) should be set up for proper TV operation before attempting the service adjustments.

1. Disconnect the AC power cord (AC 120V line).
2. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
3. Select NO. 01 HP (H Phase) with ▲ or ▼ key. Adjust the data with + or – key for 20.
4. Select NO. 14 AF (Auto Flesh) with ▲ or ▼ key. Adjust the data with + or – key for 1.
5. Select NO. 21 GD (Green Drive Reduction) with ▲ or ▼ key. Adjust the data with + or – key for 8.
6. Select NO. 24 AG (AFC Gain) with ▲ or ▼ key. Adjust the data with + or – key for 0.
7. Select NO. 26 SCO (Sub Color) with ▲ or ▼ key. Adjust the data with + or – key for 7.
8. Select NO. 27 STI (Sub Tint) with ▲ or ▼ key. Adjust the data with + or – key for 19.
9. Select NO. 28 SSH (Sub Sharpness) with ▲ or ▼ key. Adjust the data with + or – key for 6.
10 Select NO. 29 OPT (Option 1) with ▲ or ▼ key. Adjust the data with + or – key for 0.
11. Select NO. 30 OP2 (Option 2) with ▲ or ▼ key. Adjust the data with + or – key for 113.
12. Select NO. 31 HR (OSD Display H-Position) with ▲ or ▼ key. Adjust the data with + or – key for 45.
13. Select NO. 38 SBO (Sub Bright Offset) with ▲ or ▼ key. Adjust the data with + or – key for 3.
14. Select NO. 39 PCO (PIP Color) with ▲ or ▼ key. Adjust the data with + or – key for 39.
15. Select NO. 40 PTI (PIP Tint) with ▲ or ▼ key. Adjust the data with + or – key for 41.
16. Select NO. 45 PCN (PIP Contrast) with ▲ or ▼ key. Adjust the data with + or – key for 44.
17. Press the MENU key to turn off the Service Menu display.

ON-SCREEN SERVICE MENU SYSTEM

1. **Enter the Service Menu:**
   - While pressing the MENU key, reconnect the AC power cord. The Service Menu Display will now appear. (See Figure 1.)

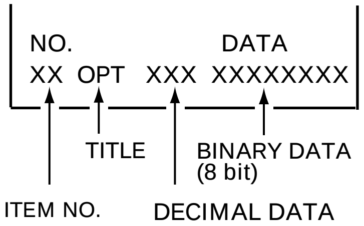


Figure 1. Service Menu Display

2. **Service Adjustments:**
   - Press the ▲ or ▼ key to select the desired service menu you want to adjust. (See page 4 for On-screen Service Menu.)
   - Use the + or – key to adjust the data.

3. **Exit from the Service Menu:**
   - Press the MENU key to turn off the Service Menu display.

Table 1. ON-SCREEN SERVICE MENU

When IC802 (EEPROM) is replaced, check the bus data to confirm they are the same as below. The shaded menu should be checked and be set up or readjusted according to the procedures described in the following pages. Initial Setup Data marked with an * should be changed from Initial Reference Data. (See page 3 for Initial Bus Data Setup.)

NO.	TITLE	INITIAL REFERENCE DATA	INITIAL SETUP DATA	RANGE OF DATA	FUNCTION
01	HP	15	20*	0~31	H Phase (H Centering)
02	IAS	0	0	0, 1	IF AGC Switch 0: TV (Normal) 1: AV (IF Gain Minumum)
03	RAD	25	25	0~63	RF AGC Delay
04	PT	64	64	0~127	PLL Tuning
05	ADA	31	31	0~63	APC Detect Adjust
06	CD	0	0	0, 1	C-Diff
07	VS	32	32	0~63	Vertical Size
08	RB	0	0	0~255	Red Bias
09	GB	0	0	0~255	Green Bias
10	BB	0	0	0~255	Blue Bias
11	RD	60	60	0~127	Red Drive
12	BD	60	60	0~127	Blue Drive
13	TDS	0	0	0, 1	Trap & D (B.P.F.) Switch 0: OFF 1: ON
14	AF	0	1*	0, 1	Auto Flesh 0: OFF 1: ON
15	BS	0	0	0, 1	Black Stretch 0: OFF 1: ON
16	VL	4	4	0~7	Video Level
17	FL	15	15	0~31	FM Level
18	NIS	1	1	0, 1	N/I Switch (Black Noise Inverter) 0: OFF 1: ON
19	ABL	1	1	0,1	ABL Defeat 0: OFF 1: ON
20	WP	1	1	0,1	White Peak Limiter 0: OFF 1: ON
21	GD	7	8*	0~15	Green Drive Reduction
22	VC	0	0	0~7	Vert. Comp
23	VD	32	32	0~63	Vert. DC
24	AG	3	0*	0~3	AFC Gain 00: Auto 01: High Gain 10: Low Gain 11: Non-Gate
25	SB	32	32	0~63	Sub Brightness
26	SCO	10	7*	0~31	Sub Color
27	STI	14	19*	0~31	Sub Tint
28	SSH	8	6*	0~15	Sub Sharpness
29	OPT	0	0	0~255	Option 1 (See Note 1 page 5.)
30	OP2	0	113*	0~255	Option 2 (See Note 2 page 5.)
31	HR	43	45*	0~63	H Position (OSD H Position)
32	ATT	15	15	0~15	Attenuation
33	STE	—	—	—	Not Used
34	FIL	—	—	—	Not Used
35	WDB	32	32	0~63	Wideband
36	SPC	32	32	0~63	Spectral
37	SPV	—	—	—	Not Used
38	SBO	5	3*	0~255	Sub Bright Offset
39	PCO	42	39*	0~127	PIP Color
40	PTI	36	41*	0~63	PIP Tint
41	PUV	24	24	0~255	PIP Upper Vertical Position
42	PDV	147	147	0~255	PIP Lower Vertical Position
43	PLH	9	9	0~255	PIP Left Side Horizontal Position
44	PRH	99	99	0~255	PIP Right Side Horizontal Position
45	PCN	47	44*	0~127	PIP Contrast
46	PBS	14	14	0~63	PIP Burst Gate Position
47	DRV	60	60	0~127	Red Drive Adjustment (See Note 3 page 5.)
		60	60	0~127	Blue Drive Adjustment (See Note 3 page 5.)
48	–	0	0	0~255	Red Bias Adjustment (See Note 4 page 5.)
	–	0	0	0~255	Green Bias Adjustment (See Note 4 page 5.)
	–	0	0	0~255	Blue Bias Adjustment (See Note 4 page 5.)

PROGRAM CODES

The microprossesor used in this model is a multi-purpose type and is used in several different models. To ensure proper operation and the correct features for your particular model, the Program Codes must be correct.

Note 1. Option Data 1 (NO. 29 OPT) should be decimal 0 (00000000 binary). See page 3 INITIAL DATA SETUP, step 10, for set up procedure. If this program code is wrong the TV will not operate properly.

BIT	FUNCTION	DATA	
		0	1
0, 1	TV HOTEL MONITOR	00: TV 01: HOTEL 10: MONITOR (*1) 11: INHIBITED (=TV)	
2	VIDEO INPUT	NONE (*2)	YES
3, 4	CLOCK	00: NONE 01: YES (AC 60 HZ) 10: YES (INT OSC) 11: INHIBITED (=NONE)	
5	STEREO/MONO	MONO (*3)	STEREO
6, 7	SURROUND	00: NONE 01: YES 10: Q-SOUND 11: INHIBITED (=NONE)	

Note 2. Option Data 2 (NO. 30 OP2) should be decimal 113 (01110001 binary). See page 3 INITIAL DATA SETUP, step 11, for set up procedure. If this program code is wrong the TV will not operate properly.

BIT	FUNCTION	DATA	
		0	1
0	NOT USED	—	—
1	COLOR ENHANCER	NONE	YES
2	INITIAL CHANNEL	NONE	YES (*4)
3	NOT USED	—	—
4	PIP	NONE	YES
5	AV1/AV1, AV2	AV1	AV1, AV2
6	TONE/BASS, TREBLE	BASS, TR	TONE(*5)
7	GAME	NONE	YES

*1. When the Monitor option is used, the CPU regards the Video Input option as Yes and the PIP option as None.
*2. When the None Video Input option is used, the CPU regards the PIP option as None.
*3. When the Mono option is used, the CPU regards the Surround and Tone options as None.
*4. When the Initial Channel option is used the Initial Channel and XDS (Extended Data Service) features are available.
*5. When the Mono option is used, the CPU regards the Tone option as None.

Note 3. Red/Blue Drive Adjustments in Service Menu NO. 47 DRV: Adjust Red and Blue Drive Levels alternately with 1, 3, 7, and 9 keys on the remote control. (See Figure 2.) The Drive Level adjustment data will be written in the Service Menu No. 11 and 12 automatically.

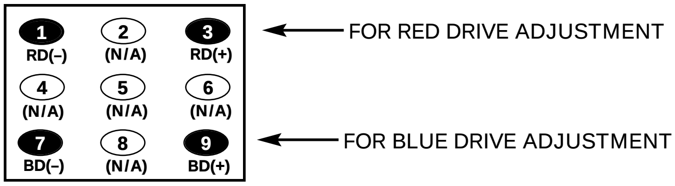


Figure 2.

Note 4. Red/Green/Blue Bias Adjustments in Service Menu NO. 48: Adjust each Bias Level with 1, 3, 4, 6, 7, or 9 key on the remote control. (See Figure 3.) The Bias Level adjustment data will be written in the Service Menu No. 08 ~ 10 automatically.

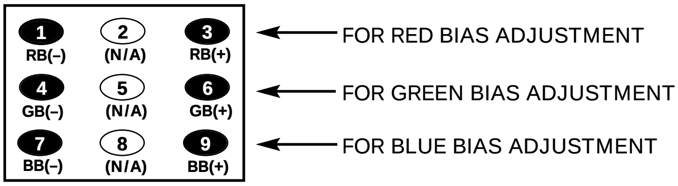


Figure 3.

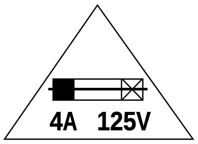
ANTENNA CONNECTIONS

This receiver is designed for UHF/VHF reception. A 75 ohm terminal is provided for UHF and VHF receptions. When connecting a CATV antenna system, connect the 75 ohm coaxial cable directly to the 75 ohm terminal. For 300 ohm VHF antenna, use an adapter (not included with the TV set).

CIRCUIT PROTECTION

Fuse F601 (4A) is included in the AC line. This fuse must be replaced with the proper fuse (see Parts List).

CAUTION



FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE 4A, 125V FUSE.

ATTENTION : POUR MAINTENIR LA PROTECTION CONTRE LES RISQUES D' INCENDIE UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE 4A, 125V.

+B VOLTAGE CHECK

Connect Voltmeter + lead to TJ1 130V and – lead to ground (TE7). Connect receiver to AC 120V line. Tune receiver to an active channel. Reset the picture controls to the News levels. Voltage must measure between +128.0V and +132.0V. If the voltage is out of this range, the power circuit must be checked. No +B adjustment is provided on this chassis.

HORIZONTAL WIDTH ADJUSTMENT

1. Tune receiver to an active channel.
2. Adjust H Width Control (VR461) for proper width.
3. Select several other channels and check width.

HORIZONTAL CENTERING ADJUSTMENT

1. Tune receiver to an active channel.
2. Check that picture is in the horizontal center of TV screen. If picture is not centered horizontally, perform steps 3 ~ 6.
3. Turn off the receiver and disconnect the AC power cord (120V AC line).
4. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
5. Select NO. 01 HP (Horizontal Phase) with ▲ or ▼ key.
6. Adjust the data with + or – key for horizontal center. To turn off the Service Menu display, press the MENU key.

VERTICAL SIZE ADJUSTMENT

1. Tune receiver to an active channel.
2. Check the vertical size of the picture. If the vertical size is too large or small, perform steps 3 ~ 6.
3. Turn off the receiver and disconnect the AC power cord (120V AC line).
4. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
5. Select NO. 07 VS (Vertical Size) with ▲ or ▼ key.
6. Adjust the data with + or – key for full scan. To turn off the Service Menu display, press the MENU key.

VERTICAL CENTERING ADJUSTMENT

1. Tune receiver to an active channel.
2. Check that picture is in the center of TV screen. If picture center is too low, connect resistor R513 (470 ohm, 1W). If picture center is too high, connect resistor R512 (470 ohm, 1W).

GRAYSCALE ADJUSTMENT

1. Set the picture controls to the Sports or Reset levels (use MENU key and ▲ or ▼ key, or RESET key).
2. Turn off the receiver and disconnect the AC power cord (120V AC line).
3. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
4. Select NO. 08 RB (Red Bias), NO. 09 GB (Green Bias), and NO. 10 BB (Blue Bias) with ▲ or ▼ key and set each data to 0 with + or – key.
5. Select NO. 11 RD (Red Drive) and NO. 12 BD (Blue Drive) with ▲ or ▼ key and set each data to 60 with + or – key.
6. Set NO. 21 GD (Green Drive Reduction) data to 8, NO. 25 SB (Sub Brightness) data to 32, NO. 26 SCO (Sub Color) data to 7, NO. 27 STI (Sub Tint) to 19, and NO. 28 SSH (Sub Sharpness) data to 6 with ▲ or ▼, and + or – keys.
7. Turn Screen Control (T402) to minimum (fully counter-clockwise).
8. Select the Service Menu NO. 48 (Bias Adjustments) with ▲ or ▼ key.
9. Advance Screen Control (T402) clockwise to obtain just visible one color line. If line does not appear, place this control to maximum (fully clockwise).
10. Raise each Bias Level with 3, 6, and 9 keys to obtain just visible white line. (See Figure 4.)

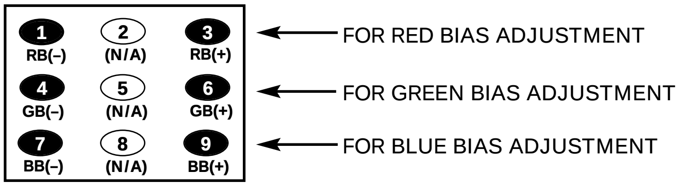


Figure 4. Remote Control Number keys' functions in Service Menu NO. 48

11. Select the Service Menu NO. 47 DRV (Drive Adjustments) with ▲ or ▼ key.
12. Adjust Red and Blue Drive Levels alternately with 1, 3, 7, or 9 key to produce normal black and white picture in highlight areas. (See Figure 5.)

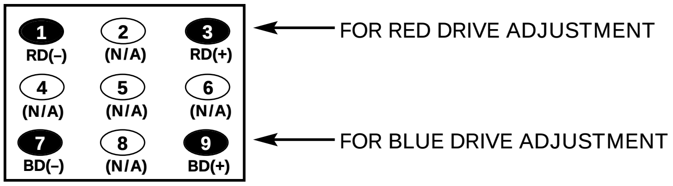


Figure 5. Remote Control Number keys' functions in Service Menu NO. 47 DRV

13. Check for proper grayscale at all brightness levels. To turn off the Service Menu display, press the MENU key.

Note: If Grayscale Adjustment is made after picture tube replacement, check Brightness Level Adjustment.

FOCUS ADJUSTMENT

Adjust focus control (T402) for well defined scanning lines.

PLL TUNING ADJUSTMENT

Note: PLL Tuning must be adjusted after IC101 (Signal Processor), IC802 (EEPROM) or T151 (PLL VCO Coil) is replaced.

1. Disconnect the AC power cord (120V AC line).
2. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
3. Select NO. 04 PT (PLL Tuning) with ▲ or ▼ key.
4. Adjust the data to 64 with + or – key.
5. Disconnect the AC power cord (120V AC line).
6. Connect voltmeter + lead to TP113 on main board and – lead to main board ground.
7. Press and Hold the POWER key on the front control panel while connecting the AC power cord. TV will turn on.
8. Disconnect the antenna terminal and select a good quality active color channel in your area, using keys 0 ~ 9 on the remote control. Wait a few seconds, and then reconnect the antenna terminal.
9. Turn PLL VCO coil (T151) on main board fully clockwise, and then gradually turn the coil counterclockwise until voltage is at the maximum level (approximately 6.7 VDC). Continue to turn the coil counterclockwise until the voltage is at the minimum level (approximately 0.7 VDC), and then turn the coil clockwise until voltage indicates 3.8 ± 1.0 VDC. Voltage change in the coil adjustments is shown in Figure 6.
10. Disconnect voltmeter from chassis.

Select every active channel with keys 0 ~ 9 and the scanning keys, and check to be sure the AFT is operating properly.

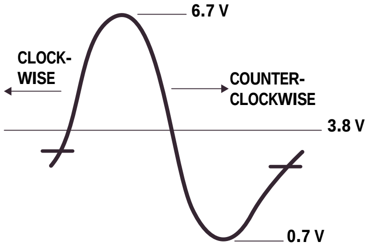


Figure 6. Voltage Change in Coil Adjustment

RF AGC ADJUSTMENT

1. Tune receiver to strongest VHF station in your area.
2. Set contrast and brightness controls for maximum.
3. Turn off the receiver and disconnect the AC power cord (120V AC line).
4. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
5. Select NO. 03 RAD (RF AGC Delay) with ▲ or ▼ key.
6. Adjust the data with + or – key in the direction which causes snow to appear; then in the opposite direction until the snow just disappears.
7. To turn off the Service Menu display, press the MENU key.

BRIGHTNESS LEVEL ADJUSTMENT

Note: Grayscale, RF AGC, Video Level, and High Voltage Check must be adjusted before attempting Brightness Level Adjustment.

1. Connect a color-bar generator to the antenna terminals.
2. Switch the generator to the crosshatch pattern.
3. Reset the picture controls to the Sports levels.
4. Connect voltmeter (high impedance) + lead to terminal TP51 and – lead to terminal TP50 on main board. Set voltmeter for 1.5V ~ 3V range.
5. Turn off the receiver and disconnect the AC power cord (120V AC line).
6. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
7. Select NO. 25 SB (Sub Brightness) with ▲ or ▼ key.
8. Adjust the data with + or – key for 820 mVDC.
9. Press the MENU key to turn off the Service Menu display.
10. Check brightness level on every active channel, readjust (repeat steps 5 ~ 9), if necessary.

Note: Do not set to excessive brightness level, otherwise the contrast level will be suppressed.

HIGH VOLTAGE HOLD-DOWN TEST

Every time the receiver is serviced, the HIGH VOLTAGE HOLD-DOWN circuit must be tested for proper operation by following these steps:

1. Connect receiver to 120V AC line. Tune receiver to active channel. Reset the picture controls to the Sports levels.
2. Check that the voltage measured between TP7 and TE7 (ground side) is within 16.5 VDC to 21 VDC. If the voltage is out of this range, the Hold-Down Circuit must be checked.
3. Connect a DC Voltage supply to TP7 and TE7 through a 100 ohm 1/4W resistor. Adjust the DC voltage to 23 VDC. The receiver should shutdown, losing raster and sound. Then the receiver should turn off automatically. This reaction indicates that the Hold-Down circuit is functioning properly. If the receiver does not shutdown, a malfunction is indicated and its cause **must** be found and corrected.
4. To obtain picture again, remove the DC Supply and wait a few minutes. Now turn on the receiver.

HIGH VOLTAGE CHECK

Note: +B (+130V) Voltage Check and Grayscale Adjustment must be completed before attempting High Voltage Check.

1. Connect high voltage voltmeter – lead to ground, and connect + lead to anode of picture tube.
2. Tune receiver to an active channel and confirm TV is operating properly.
3. Eliminate the beam current by adjusting the contrast and brightness controls to minimum.
4. Confirm high voltage is within 31.0 KV and 33.0 KV. If reading is not within range, check horizontal circuit.

No high-voltage adjustment is provided on this chassis.

SOUND ADJUSTMENT

1. Connect Voltmeter – lead to ground and + lead to IC101 Pin 50 (TP20, FM DET OUT).
2. Tune receiver to an active channel.
3. Confirm D.V.M. reading of 3.85 ± 0.2 VDC.
4. If the voltage is out of this range, adjust Sound I.F. Transformer (T131) for 3.85 ± 0.2 VDC.

SERVICE ADJUSTMENTS (Continued)

VIDEO LEVEL

1. Turn off the receiver and disconnect the AC power cord (AC 120V line).
2. Connect oscilloscope to TP16A and ground.
3. While pressing the Menu key, reconnect the AC power cord. The Service Menu will now appear.
4. Connect color bar generator to antenna terminals.
5. Select NO. 16 VL (Video Level) with the ▲ or ▼ key.
6. Adjust the + or – key for an oscilloscope reading of 2.0 ± 0.2 VP-P at TP16A. Press the MENU key to turn off the Service Menu display.

MULTI-SOUND SECTION ADJUSTMENTS

Note: Multi-Sound Section must be adjusted after IC101 (Signal Processor), IC3401 (MTS Decoder), IC802 (EEPROM), or T131 (Sound I.F. transformer) is replaced.

INPUT LEVEL ADJUSTMENT

1. Turn off the receiver and disconnect the AC power cord (AC 120V line).
2. Connect voltmeter (RMS) to TP317 and ground.
3. While pressing the Menu key, reconnect the AC power cord. The Service Menu will now appear.
4. Select a channel with audio of 1 KHz 100% modulation.
5. Select NO. 32 ATT (Attenuation) with the ▲ or ▼ key.
6. Adjust the + or – key for a voltmeter reading of 400 ± 5% mVrms at TP317.

SEPARATION ADJUSTMENT

7. Turn off the receiver and disconnect the AC power cord (AC 120V line).
8. Connect oscilloscope CH1 to TP317 and CH2 to TP318 and ground.
9. Connect an MTS TV/Stereo generator to antenna terminal.
10. While pressing the Menu key, reconnect the AC power cord. The Service Menu will now appear.
11. Select pilot, 300Hz audio frequency and Left modulating signal.
12. Select NO. 35 WDB (Wideband) with the ▲ or ▼ key.
13. Adjust the + or – key for minimum low frequencies at TP317. (See Figure 7.)
14. Select 4 KHz audio frequency and Right modulating signal.
15. Select NO. 36 SPC (Spectral) with the ▲ or ▼ key.
16. Adjust the + or – key for minimum high frequencies at TP318. (See Figure 7.)

Repeat adjustments (steps 11–16) until no further decreases in amplitude can be obtained. Press the MENU key to turn off the Service Menu display.

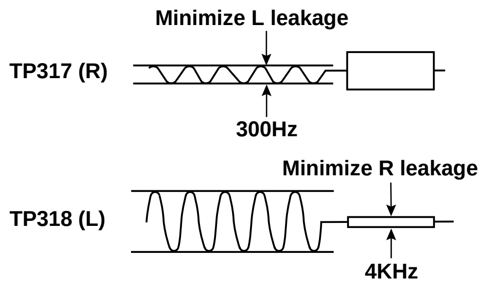


Figure 7. Separation Adjustments

PURITY AND CONVERGENCE ADJUSTMENTS

Purity and Convergence have been aligned at the factory. No re-alignment is necessary.

SERVICE HINTS

POWER FAILURE DETECTOR

This unit is equipped with a Power Failure Detector function included in the CPU which checks for an abnormal condition in the chassis power supplies, including the power supply derived from the Horizontal Output Transformer.

If, while the power is on, a failure is caused by any of the following that results in a low voltage supply, the CPU will turn the set off in 1.5 seconds to prevent unnecessary damage:

- Failure within the power supply circuits.
- A short circuit in the load side from the supply.
- Stoppage of the Horizontal Output Oscillator caused by the X-Radiation protection Hold-Down Circuit.

If, while the power is off, the power is switched on and any of these failures remains uncorrected, the CPU will shut off the power within 3 seconds.

Check the following if the unit is turned off by the power failure detector.

1. Disconnect the AC power cord (120V AC line) for at least 10 seconds.
2. Connect a DC Voltmeter to the following TEST POINTS.

TJ5	**9V**
TJ7	**7.6V**
D312 Cathode	**5V**
D429 Cathode	**5V**

3. Press the Power key and check for the proper voltage supplies.
4. If any of these voltages is low, the power failure detector should turn the unit off within 3 seconds.
5. Check all circuits listed above.

Note: This unit is equipped with a Power Surge Protection feature included in the CPU. If power failure occurs three times within 15 minutes, the CPU will automatically stop functioning to help prevent secondary damage. (TV will not turn on by pressing the power key.) To reset the operating programs within the CPU, disconnect the AC power cord for at least 10 seconds.

MECHANICAL DISASSEMBLIES

CABINET BACK REMOVAL

1. Refer to Figure 1, remove 12 screws.
2. Pull off cabinet back and remove.

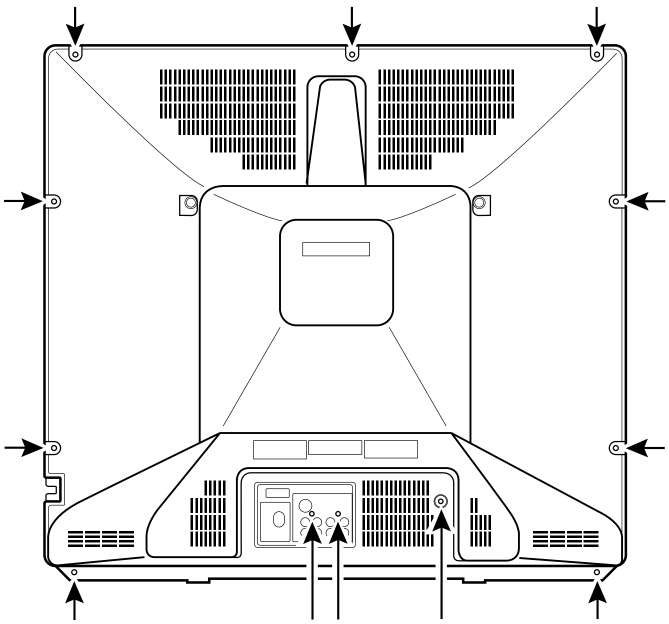


Figure 1. Cabinet Back Removal

CHASSIS REMOVAL

1. Remove cabinet back.
2. Discharge the picture tube anode (2nd anode lead) to the dag coating (picture tube grounding lead).
3. Disconnect degaussing coil socket (KD), picture tube socket, deflection yoke connector (KX), speakers connector (KSP), picture tube ground lead, and 2nd anode lead.
4. Remove chassis completely by sliding it straight back.

PICTURE TUBE REMOVAL

CAUTION: Do not disturb the deflection yoke or magnet assembly on the picture tube neck. Care must be taken to keep these assemblies intact, unless picture tube is being replaced. Discharge the picture tube to the coating before handling the tube.

1. Remove chassis, referring to Chassis Removal instructions.
2. Place cabinet's front face down on a soft surface.
3. Remove the screw on each corner of the picture tube and GENTLY lift the picture tube out of the cabinet.
4. Install a replacement picture tube in reverse order. Properly install the degaussing coil and picture tube grounding lead on the picture tube. See Figure 2.

Note: If Picture Tube is being replaced, mount the Degaussing Coil properly on the tube. See Figure 2.

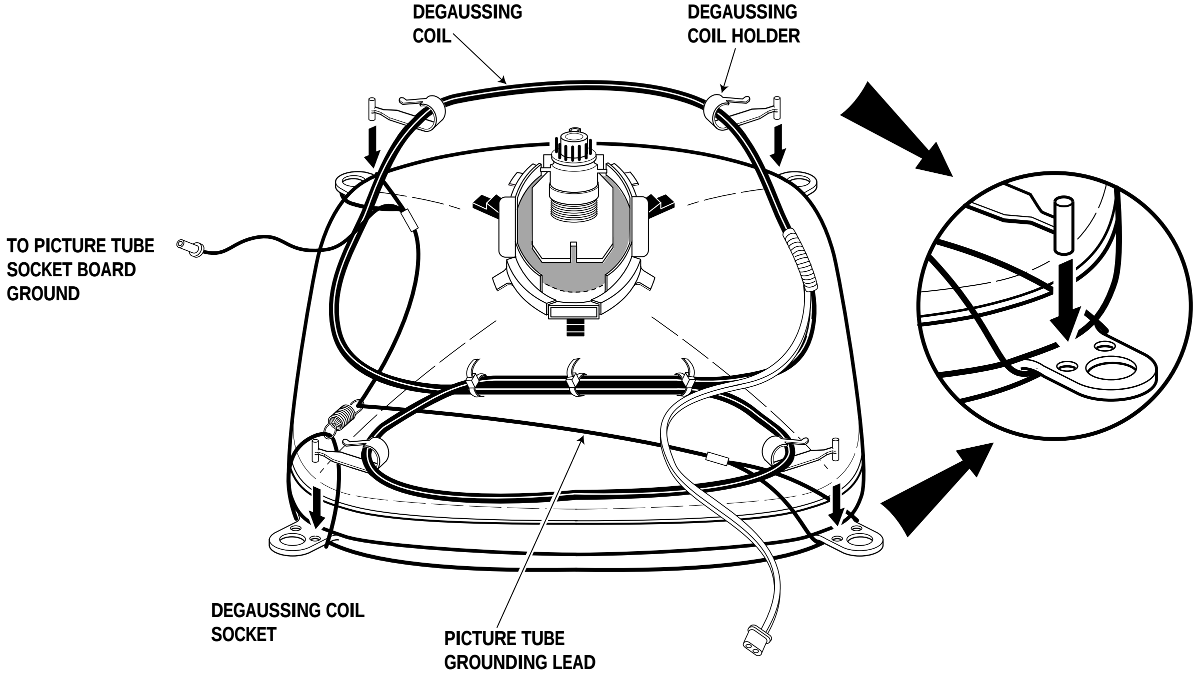


Figure 2. Picture Tube Removal

CHASSIS ELECTRICAL PARTS LIST

CAUTION: To Protect against electrical shock and for continued product safety, refer to SAFETY PRECAUTIONS, X-RADIATION PRECAUTIONS, HIGH VOLTAGE HOLD-DOWN TEST, and PRODUCT SAFETY NOTICE on Page 2.

PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A REPLACEMENT IS MADE IN ANY AREA OF A RECEIVER. COMPONENTS INDICATED BY A STAR (★) IN THIS PARTS LIST AND THE SCHEMATIC DIAGRAM DESIGNATE COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. IT IS PARTICULARLY RECOMMENDED THAT ONLY PARTS DESIGNATED ON THE FOLLOWING PARTS LIST BE USED FOR COMPONENT REPLACEMENT DESIGNATED BY A STAR. NO DEVIATIONS FROM RESISTANCE, WATTAGE, AND VOLTAGE RATINGS MAY BE MADE FOR REPLACEMENT ITEMS DESIGNATED BY A STAR.

Notes: Parts having Location Number are located on the following boards.
- Numbers under 700 Series ....On the Main Board.
- Numbers 700 Series ....On the Picture Tube Socket Board.
- Numbers 800 Series ....On the Main Board
- Numbers 900 Series ....Out of Board.
- Numbers 1000 Series ....On the Main Board
- Numbers 1900 series ....On the Front Control Board
- Numbers 3400 series ....On the Main Board
- Numbers 8000 series ....On the Main Board

Note: Schematic part location numbers may not always match with the part descriptions.
The part descriptions are correct and should be used.

CAPACITORS

NOTES:
Read description of the Capacitor as follows:

(Example)
CERAMIC 100P K 50V

- 50V — Rated Voltage
- K — Tolerance Symbols:
  - less than 10PF
    - A ..Not specified
    - B ..±0.1PF C ..±0.25PF
    - D ..±0.5PF F ..±1PF
    - G ..±2PF R ..+0.25 - 0PF
    - S ..+0 - 0.25PF E ..+0 - 1PF
  - more than 10PF
    - A ..Not specified
    - B ..±0.1% C ..±0.25%
    - D ..±0.5% F ..±1%
    - G ..±2% H ..±3%
    - J ..±5% K ..±10%
    - L ..±15% M ..±20%
    - N ..±30% P ..+100 - 0%
    - Q ..+30 - 10% T ..+50 - 10%
    - U ..+75 - 10% V ..+20 - 10%
    - W .+100 - 10% X ..+40 - 20%
    - Y ..+150 - 10% Z ..+80 - 20%
- 100P — Rated Value: P...Pico Farad U...Micro Farad
- CERAMIC — Material:
  - CERAMIC ......Ceramic
  - MT-PAPER .....Metalized Paper
  - POLYESTER ...Polyester
  - MT-POLYEST ..Metalized Polyester
  - POLYPRO .....Polypropylene
  - MT-POLYPRO ..Metalized Polypropylene
  - COMPO-FILM ..Composite Film
  - MT-COMPO ....Metalized Composite
  - STYRENE ......Styrene
  - TA-SOLID ......Tantalum Solid
  - AL-SOLID ......Aluminum Solid
  - ELECT ....Electrolytic
  - NP-ELECT .....Non-Polarized Electrolytic
  - OS-SOLID .....Aluminum Solid with Organic Semiconductive Electrolytic

Schematic Location	Part No.	Description		
C001	403 049 0008	ELECT	1U M	50V
C002	403 049 0008	ELECT	1U M	50V
C003	403 074 7607	CERAMIC	5600P K	50V
C004	403 074 7607	CERAMIC	5600P K	50V
C010	403 043 0202	ELECT	220U M	16V
C011	403 043 0202	ELECT	220U M	16V
C015	403 044 1703	ELECT	470U M	16V
C016	403 069 9500	CERAMIC	0.01U Z	50V
C018	403 069 9500	CERAMIC	0.01U Z	50V
C101	403 039 3507	ELECT	470U M	6.3V
C103	403 069 9500	CERAMIC	0.01U Z	50V
C106	403 050 6600	ELECT	3.3U M	50V
C108	403 009 5708	CERAMIC	100P J	50V
C109	403 009 5708	CERAMIC	100P J	50V
C131	403 049 0008	ELECT	1U M	50V
C133	403 069 9500	CERAMIC	0.01U Z	50V
C139	403 041 8804	ELECT	10U M	16V
C141	403 069 9500	CERAMIC	0.01U Z	50V
C142	403 062 7107	POLYESTER	0.056U K	50V
	403 312 2609	POLYESTER	0.056U K	50V
C143	403 069 9500	CERAMIC	0.01U Z	50V
C147	403 043 9106	ELECT	47U M	16V
C151	403 048 6308	ELECT	0.47U M	50V
C160	403 256 2406	CERAMIC	0.22U Z	50V
C161	403 069 9500	CERAMIC	0.01U Z	50V
C166	403 020 0409	CERAMIC	27P J	50V
C202	403 069 9500	CERAMIC	0.01U Z	50V
C208	403 041 8804	ELECT	10U M	16V
C211	403 049 0008	ELECT	1U M	50V
C212	403 049 9803	ELECT	2.2U M	50V
C221	403 041 8804	ELECT	10U M	16V
C252	403 060 8403	POLYESTER	0.033U K	50V
	403 312 1305	POLYESTER	0.033U K	50V
C253	403 049 9803	ELECT	2.2U M	50V
C256	403 041 4509	ELECT	470U M	10V
C257	403 069 9500	CERAMIC	0.01U Z	50V
C258	403 041 8804	ELECT	10U M	16V
C272	403 050 6600	ELECT	3.3U M	50V

Schematic Location	Part No.	Description		
C300	403 069 9500	CERAMIC	0.01U Z	50V
C303	403 070 2606	CERAMIC	0.1U Z	50V
C304	403 043 9106	ELECT	47U M	16V
C306	403 028 4102	CERAMIC	56P J	50V
C307	403 018 0503	CERAMIC	22P J	50V
C308	403 022 8205	CERAMIC	33P J	50V
C309	403 041 8804	ELECT	10U M	16V
C310	403 069 9500	CERAMIC	0.01U Z	50V
C312	403 048 6308	ELECT	0.47U M	50V
C313	403 069 9500	CERAMIC	0.01U Z	50V
C314	403 069 9500	CERAMIC	0.01U Z	50V
C315	403 011 4904	CERAMIC	120P J	50V
C316	403 069 9500	CERAMIC	0.01U Z	50V
C317	403 014 9203	CERAMIC	180P J	50V
C318	403 069 9500	CERAMIC	0.01U Z	50V
C322	403 069 9500	CERAMIC	0.01U Z	50V
C323	403 069 9500	CERAMIC	0.01U Z	50V
C331	403 069 9500	CERAMIC	0.01U Z	50V
C332	403 039 3507	ELECT	470U M	6.3V
C336	403 024 2102	CERAMIC	39P J	50V
C338	403 070 2606	CERAMIC	0.1U Z	50V
C341	403 018 0503	CERAMIC	22P J	50V
C342	403 033 4500	CERAMIC	82P J	50V
C343	403 009 5708	CERAMIC	100P J	50V
C344	403 069 9500	CERAMIC	0.01U Z	50V
C351	403 050 6600	ELECT	3.3U M	50V
C352	403 070 5508	CERAMIC	1200P K	50V
C371	403 048 6308	ELECT	0.47U M	50V
C401	403 052 7308	ELECT	100U M	35V
C403	403 059 6205	POLYESTER	0.022U K	50V
	403 312 0506	POLYESTER	0.022U K	50V
C405	403 051 0607	ELECT	4.7U M	50V
C406	403 076 3607	CERAMIC	470P K	500V
C407	403 076 0507	CERAMIC	2200P K	500V
C408	403 103 0005	ELECT	4.7U M	160V
★ C411	404 077 5003	MT-POLYPRO	8600P H	1.5KV
	403 343 8502	MT-POLYPRO	8600P H	1.5KV
★ C412	404 077 4600	MT-POLYPRO	7800P H	1.5KV
	403 343 8205	MT-POLYPRO	7800P H	1.5KV
★ C413	403 083 4307	POLYPRO	0.022U J	400V
★ C414	403 083 4307	POLYPRO	0.022U J	400V
★ C416	404 081 2609	MT-POLYPRO	0.27U M	200V
	403 346 7126	MT-POLYPRO	0.27U J	250V
★ C417	404 081 2302	MT-POLYPRO	0.2U M	200V
	403 346 6822	MT-POLYPRO	0.2U J	250V
C419	403 158 9107	MT-POLYEST	2.2U K	100V
C421	403 038 6301	ELECT	220U M	6.3V
C426	403 039 3507	ELECT	470U M	6.3V
C461	403 044 6609	ELECT	10U M	25V
C462	403 043 9106	ELECT	47U M	16V
C466	403 047 3100	ELECT	47U M	25V
C470	403 166 7706	MT-POLYEST	0.47U J	63V
C470	403 067 7805	MT-COMPO	0.47U J	50V
C481	403 069 9500	CERAMIC	0.01U Z	50V
C482	403 115 0802	ELECT	22U M	100V
C484	403 051 0607	ELECT	4.7U M	50V
C486	403 076 3607	CERAMIC	470P K	500V
C487	403 052 8503	ELECT	1000U M	35V
C489	403 044 1703	ELECT	470U M	16V
C493	404 056 5307	NP-ELECT	2.2U M	100V
C497	403 039 6508	ELECT	100U M	10V

Schematic Location	Part No.	Description		
C502	403 053 2104	ELECT	220U M	35V
C503	403 204 1802	ELECT	3.3U K	50V
C504	403 045 9807	ELECT	2200U M	25V
C505	403 166 8000	MT-POLYEST	0.33U J	63V
	403 067 7300	MT-COMPO	0.33U J	50V
C506	403 059 0104	POLYESTER	0.018U K	50V
	403 312 0100	POLYESTER	0.018U K	50V
C509	403 166 7706	MT-POLYEST	0.47U J	63V
	403 067 7805	MT-COMPO	0.47U J	50V
★ C511	403 057 2100	POLYESTER	0.1U J	50V
	403 311 8800	POLYESTER	0.1U J	50V
	403 057 3107	POLYESTER	0.1U K	50V
	403 311 8909	POLYESTER	0.1U K	50V
C516	403 041 8804	ELECT	10U M	16V
★ C601	404 071 2404	MT-POLYEST	0.22U M	250V
	404 066 2204	MT-POLYEST	0.22U M	275V
★ C608	403 271 9701	CERAMIC	3300P K	1K
C609	404 075 5005	ELECT	470U M	200V
C612	403 166 8208	MT-POLYEST	0.18U J	63V
	403 067 6501	MT-COMPO	0.18U J	50V
C613	403 214 5203	POLYESTER	0.012U J	50V
	403 311 9203	POLYESTER	0.012U J	50V
C620	403 214 5203	POLYESTER	0.012U J	50V
	403 311 9203	POLYESTER	0.012U J	50V
C622	403 044 1703	ELECT	470U M	16V
★ C625	403 266 5008	CERAMIC	2700P K	1K
C626	403 043 1902	ELECT	2200U M	16V
C628	404 073 9005	ELECT	220U M	160V
C629	403 043 0202	ELECT	220U M	16V
C630	403 049 0008	ELECT	1U M	50V
★ C632	404 008 6802	CERAMIC	2200P M	125V
	404 046 5003	CERAMIC	2200P M	125V
	404 073 4604	CERAMIC	2200P M	250V
C634	403 043 9106	ELECT	47U M	16V
C683	403 038 6301	ELECT	220U M	6.3V
C688	403 042 2405	ELECT	100U M	16V
C689	403 070 2606	CERAMIC	0.1U Z	50V
C693	403 049 0008	ELECT	1U M	50V
C701	403 075 4803	CERAMIC	820P K	50V
C711	403 074 9502	CERAMIC	680P K	50V
C721	403 075 4803	CERAMIC	820P K	50V
C741	403 049 0008	ELECT	1U M	50V
★ C742	403 077 2807	CERAMIC	1000P Z	2K
C801	403 069 9500	CERAMIC	0.01U Z	50V
C806	403 039 3507	ELECT	470U M	6.3V
C811	403 049 0008	ELECT	1U M	50V
C822	403 041 8804	ELECT	10U M	16V
C829	403 049 0008	ELECT	1U M	50V
C831	403 076 6103	CERAMIC	820P K	500V
C832	403 062 0504	POLYESTER	0.047U K	50V
	403 312 2203	POLYESTER	0.047U K	50V
C835	403 069 9500	CERAMIC	0.01U Z	50V
C841	403 069 9500	CERAMIC	0.01U Z	50V
C842	403 069 9500	CERAMIC	0.01U Z	50V
C843	403 069 9500	CERAMIC	0.01U Z	50V
C853	403 047 8402	ELECT	0.1U M	50V
C854	403 011 4904	CERAMIC	120P J	50V
C856	403 049 0008	ELECT	1U M	50V
C857	403 018 7403	CERAMIC	220P J	50V
C858	403 069 1702	CERAMIC	1000P K	50V
C862	403 069 9500	CERAMIC	0.01U Z	50V

Schematic Location	Part No.	Description		
C884	403 009 5708	CERAMIC	100P J	50V
C1000	403 069 9500	CERAMIC	0.01U Z	50V
C1001	403 041 8804	ELECT	10U M	16V
C1002	403 042 7707	ELECT	22U M	16V
C1004	403 069 9500	CERAMIC	0.01U Z	50V
C1005	403 070 2606	CERAMIC	0.1U Z	50V
C1006	403 041 8804	ELECT	10U M	16V
C1011	403 069 9500	CERAMIC	0.01U Z	50V
C1021	403 041 8804	ELECT	10U M	16V
C1022	403 042 7707	ELECT	22U M	16V
C1026	403 041 8804	ELECT	10U M	16V
C1031	403 069 9500	CERAMIC	0.01U Z	50V
C1081	403 043 9106	ELECT	47U M	16V
C1082	403 069 9500	CERAMIC	0.01U Z	50V
C1091	403 069 9500	CERAMIC	0.01U Z	50V
C1902	403 041 8804	ELECT	10U M	16V
C1910	403 069 9500	CERAMIC	0.01U Z	50V
C3401	403 047 8402	ELECT	0.1U M	50V
C3404	403 086 0108	NP-ELECT	4.7U M	25V
C3406	403 070 6703	CERAMIC	0.012U K	50V
C3407	403 074 7607	CERAMIC	5600P K	50V
C3408	403 048 6308	ELECT	0.47U M	50V
C3411	403 048 6308	ELECT	0.47U M	50V
C3412	403 043 9106	ELECT	47U M	16V
C3413	403 046 9905	ELECT	4.7U M	25V
C3414	403 042 2405	ELECT	100U M	16V
C3416	403 086 0108	NP-ELECT	4.7U M	25V
C3417	403 046 9905	ELECT	4.7U M	25V
C3418	403 086 0108	NP-ELECT	4.7U M	25V
C3421	403 072 5605	CERAMIC	2700P K	50V
C3422	403 130 3109	CERAMIC	0.047U K	50V
C3423	403 342 9203	TA-SOLID	3.3U K	10V
C3424	403 086 0108	NP-ELECT	4.7U M	25V
C3426	403 299 1820	TA-SOLID	10U K	10V
C3427	403 049 0008	ELECT	1U M	50V
C3431	403 073 9107	CERAMIC	4700P K	50V
C3432	403 047 8402	ELECT	0.1U M	50V
C3433	403 073 9107	CERAMIC	4700P K	50V
C3434	403 072 1607	CERAMIC	0.022U K	50V
C3435	403 046 9905	ELECT	4.7U M	25V
C3436	403 086 0108	NP-ELECT	4.7U M	25V
C3437	403 046 9905	ELECT	4.7U M	25V
C3439	403 086 0108	NP-ELECT	4.7U M	25V
C3442	403 046 9905	ELECT	4.7U M	25V
C3444	403 046 9905	ELECT	4.7U M	25V
C3446	403 046 9905	ELECT	4.7U M	25V
C3448	403 046 9905	ELECT	4.7U M	25V
C8002	403 043 9106	ELECT	47U M	16V
C8003	403 030 6903	CERAMIC	68P J	50V
C8011	403 030 6903	CERAMIC	68P J	50V
C8012	403 070 0909	CERAMIC	0.1U K	50V
C8014	403 073 1200	CERAMIC	0.033U K	50V
C8015	403 256 2406	CERAMIC	0.22U Z	50V
C8017	403 256 2406	CERAMIC	0.22U Z	50V
C8021	403 070 2606	CERAMIC	0.1U Z	50V
C8022	403 043 9106	ELECT	47U M	16V
C8023	403 070 2606	CERAMIC	0.1U Z	50V
C8024	403 043 9106	ELECT	47U M	16V
C8026	403 070 2606	CERAMIC	0.1U Z	50V
C8027	403 069 9500	CERAMIC	0.01U Z	50V
C8028	403 069 9500	CERAMIC	0.01U Z	50V

Schematic Location	Part No.	Description		
C8031	403 070 2606	CERAMIC	0.1U Z	50V
C8032	403 043 9106	ELECT	47U M	16V
C8033	403 070 2606	CERAMIC	0.1U Z	50V
C8034	403 069 9500	CERAMIC	0.01U Z	50V
C8035	403 069 9500	CERAMIC	0.01U Z	50V
C8036	403 041 8804	ELECT	10U M	16V
C8037	403 070 2606	CERAMIC	0.1U Z	50V
C8041	403 070 2606	CERAMIC	0.1U Z	50V
C8042	403 043 9106	ELECT	47U M	16V
C8049	403 070 2606	CERAMIC	0.1U Z	50V
C8051	403 030 6903	CERAMIC	68P J	50V
C8052	403 069 9500	CERAMIC	0.01U Z	50V
C8053	403 013 3004	CERAMIC	150P J	50V
C8054	403 069 9500	CERAMIC	0.01U Z	50V
C8055	403 070 2606	CERAMIC	0.1U Z	50V
C8056	403 070 2606	CERAMIC	0.1U Z	50V
C8057	403 070 2606	CERAMIC	0.1U Z	50V
C8058	403 069 9500	CERAMIC	0.01U Z	50V
C8059	403 043 9106	ELECT	47U M	16V
C8060	403 070 2606	CERAMIC	0.1U Z	50V
C8071	403 041 8804	ELECT	10U M	16V
C8072	403 041 8804	ELECT	10U M	16V
C8074	403 009 5708	CERAMIC	100P J	50V
C8076	403 009 5708	CERAMIC	100P J	50V
C8077	403 074 9502	CERAMIC	680P K	50V
C8081	403 048 6308	ELECT	0.47U M	50V
C8082	403 070 8806	CERAMIC	1500P K	50V
C8091	403 069 9500	CERAMIC	0.01U Z	50V

DIODES

D101	407 100 0204	ZENER DIODE MTZJ36A (36V)
	407 056 2307	ZENER DIODE RD36EB1 (36V)
D102	407 063 8903	ZENER DIODE MTZJ5.6C (5.6V)
	407 057 0104	ZENER DIODE RD5.6EB3 (5.6V)
D311	407 099 5006	ZENER DIODE MTZJ4.7A (4.7V)
	407 056 7906	ZENER DIODE RD5.1EB1 (5.1V0
D312	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D351	407 099 6607	ZENER DIODE MTZJ12B (12V)
	407 063 8408	ZENER DIODE MTZJ12C (12V)
	407 054 3207	ZENER DIODE RD12EB2 (12V)
	407 054 3306	ZENER DIODE RD12EB3 (12V)
D406	407 006 4108	DIODE ERB44-04
D407	407 095 8001	DIODE ERD07-15L
★ D421	407 158 1307	ZENER DIODE HZ11B2L (11V)
★ D422	407 158 1307	ZENER DIODE HZ11B2L (11V)
D428	407 099 7208	ZENER DIODE MTZJ16A (16V)
	407 054 7007	ZENER DIODE RD16EB1 (16V)
D429	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D463	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D481	407 124 6404	DIODE ERA18-04
	407 007 6606	DIODE ES1
	407 124 5506	DIODE RMPG06G
D482	407 011 4407	DIODE TVR1G

Schematic Location	Part No.	Description
D483	407 124 6404	DIODE ERA18-04
	407 007 6606	DIODE ES1
	407 124 5506	DIODE RMPG06G
D486	407 099 6102	ZENER DIODE MTZJ10B (10V)
	407 054 0008	ZENER DIODE RD10EB2 (10V)
D487	407 005 8602	DIODE ERA15-02
	407 088 6502	DIODE MPG06D
	407 011 3004	DIODE S5277B
	408 009 9404	DIODE 1N4002ID
D489	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D493	407 063 9306	ZENER DIODE MTZJ7.5C (7.5V)
	407 057 6502	ZENER DIODE RD7.5EB3 (7.5V)
D501	407 005 8602	DIODE ERA15-02
	407 088 6502	DIODE MPG06D
	407 011 3004	DIODE S5277B
	408 009 9404	DIODE 1N4002ID
D503	407 100 0204	ZENER DIODE MTZJ36A (36V)
	407 056 2307	ZENER DIODE RD36EB1 (36V)
★ D601	407 005 7605	DIODE EM2B
	408 008 8606	DIODE GP15G
	407 013 3200	DIODE 1S1887A
★ D602	407 005 7605	DIODE EM2B
	408 008 8606	DIODE GP15G
	407 013 3200	DIODE 1S1887A
★ D603	407 005 7605	DIODE EM2B
	408 008 8606	DIODE GP15G
	407 013 3200	DIODE 1S1887A
★ D604	407 005 7605	DIODE EM2B
	408 008 8606	DIODE GP15G
	407 013 3200	DIODE 1S1887A
D609	407 124 6503	DIODE ERA18-02
	407 007 6903	DIODE ES1Z
	407 124 5605	DIODE RMPG06D
	408 009 9008	DIODE BYD33D
D610	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D611	407 099 5808	ZENER DIODE MTZJ7.5A (7.5V)
	407 057 6304	ZENER DIODE RD7.5EB1 (7.5V)
★ D612	407 147 5705	PHOTO COUPLE ON3131S
	407 104 2402	PHOTO COUPLE PC817C
	407 106 6101	PHOTO COUPLE PC817D
	407 175 9904	PHOTO COUPLE TLP621-1-BL
D614	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
★ D621	407 007 7603	DIODE EU2
★ D624	407 211 6102	DIODE FE301-1L43
	407 129 6706	DIODE RU4YX LF-L1
★ D625	407 211 5808	DIODE FE201-6L43
	407 129 7000	DIODE RU4AM LF-L1
D627	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D629	407 099 7208	ZENER DIODE MTZJ16A (16V)
	407 054 7007	ZENER DIODE RD16EB1 (16V)
D680	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473

Schematic Location	Part No.	Description
D683	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D687	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D693	407 099 5402	ZENER DIODE MTZJ6.2B (6.2V)
	407 057 2702	ZENER DIODE RD6.2EB2 (6.2V)
D694	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D801	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D831	407 065 1308	ZENER DIODE MTZJ3.6B (3.6V)
	407 056 4707	ZENER DIODE RD4.3EB2 (4.3V)
D834	407 099 8007	ZENER DIODE MTZJ20C (20V)
	407 055 1905	ZENER DIODE RD20EB3 (20V)
D836	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D843	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D1001	407 099 6102	ZENER DIODE MTZJ10B (10V)
	407 054 0008	ZENER DIODE RD10EB2 (10V)
D1002	407 099 6102	ZENER DIODE MTZJ10B (10V)
	407 054 0008	ZENER DIODE RD10EB2 (10V)
D1006	407 099 6102	ZENER DIODE MTZJ10B (10V)
	407 054 0008	ZENER DIODE RD10EB2 (10V)
D1008	407 065 1308	ZENER DIODE MTZJ3.6B (3.6V)
	407 056 4707	ZENER DIODE RD4.3EB2 (4.3V)
D1009	407 065 1308	ZENER DIODE MTZJ3.6B (3.6V)
	407 056 4707	ZENER DIODE RD4.3EB2 (4.3V)
D1011	407 099 6102	ZENER DIODE MTZJ10B (10V)
	407 054 0008	ZENER DIODE RD10EB2 (10V)
D1021	407 099 6102	ZENER DIODE MTZJ10B (10V)
	407 054 0008	ZENER DIODE RD10EB2 (10V)
D1022	407 099 6102	ZENER DIODE MTZJ10B (10V)
	407 054 0008	ZENER DIODE RD10EB2 (10V)
D1026	407 099 6102	ZENER DIODE MTZJ10B (10V)
	407 054 0008	ZENER DIODE RD10EB2 (10V)
D1031	407 099 6102	ZENER DIODE MTZJ10B (10V)
	407 054 0008	ZENER DIODE RD10EB2 (10V)
D1901	407 063 9306	ZENER DIODE MTZJ7.5C (7.5V)
	407 057 6502	ZENER DIODE RD7.5EB3 (7.5V0
D8000	407 099 4504	ZENER DIODE MTZJ3.9A (3.9V)

Schematic Location	Part No.	Description
		INTEGRATED CIRCUITS
IC002	409 275 7903	IC LA4525
★ IC101	409 431 2100	IC LA76170N
IC301	409 406 1107	IC TC90A44P
★ IC501	409 340 1904	IC LA7841
★ IC601	409 172 8102	IC SE130NH
IC681	409 241 8309	IC TA78L05S
	409 066 7303	IC UPC78L05J
IC801	410 354 9503	IC M37272M8- FP T
IC802	409 495 6908	IC CAT24WC02P
	409 440 8902	IC M24C02-BN6
	409 376 1503	IC ST24C02B6
	409 497 0706	IC S524C20D21-DCB0
	409 333 3700	IC 24LC02B/P
IC1001	409 051 3006	IC TC4053BP
IC1002	409 051 3006	IC TC4053BP
IC1081	409 051 3006	IC TC4053BP
IC3401	409 467 1108	IC CXA2134Q-T6
IC8001	409 466 6302	IC M65667SP
		COILS
★ LF601	645 012 0589	LINE FILTER
	645 026 8274	LINE FILTER
L164	645 003 9713	INDUCTOR, 15U K
	645 016 2657	INDUCTOR, 15U K
L166	645 003 9812	INDUCTOR, 33U K
	645 016 2985	INDUCTOR, 33U K
L305	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L306	645 003 9782	INDUCTOR, 22U K
	645 016 2831	INDUCTOR, 22U K
L309	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L310	610 078 5946	PIPE CORE
	652 000 1725	CORE,PIPE
L312	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L332	645 003 9713	INDUCTOR, 15U K
	645 016 2657	INDUCTOR, 15U K
L341	645 008 2924	INDUCTOR, 8.2U K
	645 016 3227	INDUCTOR, 8.2U K
L401	645 017 7675	INDUCTOR, 3.3U, FILTER
L402	610 031 9998	PIPE CORE
L403	610 078 6820	PIPE CORE
★ L413	645 025 4406	COIL, LINEARITY
	645 029 8035	COIL, LINEARITY
L414	610 031 1367	INDUCTOR 202J
	610 211 3488	INDUCTOR
	645 007 8361	INDUCTOR, 2000U
L416	645 013 8676	INDUCTOR, 350U
L601	610 078 6820	PIPE CORE
L621	610 078 5946	PIPE CORE
	652 000 1725	CORE,PIPE
L623	610 078 5946	PIPE CORE
	652 000 1725	CORE,PIPE
L625	610 078 5946	PIPE CORE
	652 000 1725	CORE, PIPE
L628	610 078 5946	PIPE CORE
	652 000 1725	CORE, PIPE
L801	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L813	645 006 2490	INDUCTOR, 1U K
	645 016 2411	INDUCTOR, 1U K
L814	645 006 2490	INDUCTOR, 1U K
	645 016 2411	INDUCTOR, 1U K
L821	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L851	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L881	645 006 2490	INDUCTOR, 1U K
	645 016 2411	INDUCTOR, 1U K
L882	645 006 2490	INDUCTOR, 1U K
	645 016 2411	INDUCTOR, 1U K
★ L901	645 030 7430	COIL, DEGAUSSING
	645 039 2559	COIL, DEGAUSSING
	645 041 1830	COIL, DEGAUSSING
L1901	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L8007	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L8008	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L8022	610 031 3873	INDUCTOR, 10U K
	645 016 2534	INDUCTOR, 10U K
L8024	610 031 3873	INDUCTOR, 10U K
	645 016 2534	INDUCTOR, 10U K
L8032	610 031 3873	INDUCTOR, 10U K
	645 016 2534	INDUCTOR, 10U K
L8036	610 031 3873	INDUCTOR, 10U K
	645 016 2534	INDUCTOR, 10U K
L8059	610 031 3873	INDUCTOR, 10U K
	645 016 2534	INDUCTOR, 10U K
L8070	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L8074	645 003 9812	INDUCTOR, 33U K
	645 016 2985	INDUCTOR, 33U K
L8094	645 006 2490	INDUCTOR, 1U K
	645 016 2411	INDUCTOR, 1U K
L8098	645 006 2490	INDUCTOR, 1U K
	645 016 2411	INDUCTOR, 1U K
		TRANSISTORS
Q001	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q005	405 008 4805	TR 2SB764-E
	405 008 4904	TR2SB764-F
Q101	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O

Schematic Location	Part No.	Description
Q101 (Cont.)	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q135	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q162	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 151 3304	TR 2SA608NF-NPA
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q202	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q216	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q222	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q225	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)

Schematic Location	Part No.	Description
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 151 3304	TR 2SA608NF-NPA
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q301	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q306	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q307	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 151 3304	TR 2SA608NF-NPA
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q332	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 151 3304	TR 2SA608NF-NPA
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q341	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q342	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA

Schematic Location	Part No.	Description
Q342 (Cont.)	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q343	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q371	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 151 3304	TR 2SA608NF-NPA
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q372	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 151 3304	TR 2SA608NF-NPA
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q401	405 013 6207	TR 2SC2271-D-CTV
	405 013 6306	TR 2SC2271-E-CTV
★ Q402	405 082 2407	TR 2SD1879-CTV-YB
Q461	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
Q462	405 064 7307	TR 2SB1274-Q-RA
	405 064 7406	TR 2SB1274-R-RA
Q486	405 023 5009	TR 2SD400-E-MP
	405 023 5306	TR 2SD400-F-MP
★ Q601	405 095 9004	TR 2SC4423-CTV
Q604	405 058 0208	TR 2SC3807-R-CTV-YA
Q605	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 151 3304	TR 2SA608NF-NPA
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q627	405 089 0000	TR 2SA1707-S
	405 089 0109	TR 2SA1707-T
	405 009 6907	TR 2SB985-S
	405 009 7003	TR 2SB985-T

Schematic Location	Part No.	Description
Q635	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q681	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q688	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3208	TR 2SA564A-R(CU)
	405 151 3304	TR 2SA608NF-NPA
	405 006 1806	TR 2SA933S-R
Q693	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q695	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3208	TR 2SA564A-R(CU)
	405 004 4809	TR 2SA608-F-CTV-NP
Q701	406 000 3605	TR 2SC3620(LB-SAN-1)
	405 066 4304	TR 2SC2621-C-RA
	405 041 6507	TR 2SC2621-D-RA
	405 041 6705	TR 2SC2621-E-RA
	405 066 9903	TR 2SC2688(1)-K
	405 067 0008	TR 2SC2688(1)-L
	405 067 0107	TR 2SC2688(1)-M
Q711	406 000 3605	TR 2SC3620(LB-SAN-1)
	405 066 4304	TR 2SC2621-C-RA
	405 041 6507	TR 2SC2621-D-RA
	405 041 6705	TR 2SC2621-E-RA
	405 066 9903	TR 2SC2688(1)-K
	405 067 0008	TR 2SC2688(1)-L
	405 067 0107	TR 2SC2688(1)-M
Q721	406 000 3605	TR 2SC3620(LB-SAN-1)
	405 066 4304	TR 2SC2621-C-RA
	405 041 6507	TR 2SC2621-D-RA
	405 041 6705	TR 2SC2621-E-RA
	405 066 9903	TR 2SC2688(1)-K

Schematic Location	Part No.	Description
Q721 (Cont.)	405 067 0008	TR 2SC2688(1)-L
	405 067 0107	TR 2SC2688(1)-M
Q831	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 151 3304	TR 2SA608NF-NPA
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q881	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q882	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q1071	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q1093	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q1094	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 151 3304	TR 2SA608NF-NPA
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R

Schematic Location	Part No.	Description
Q1096	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q8000	405 023 5009	TR 2SD400-E-MP
	405 023 5306	TR 2SD400-F-MP
Q8005	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q8006	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q8065	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 151 3304	TR 2SA608NF-NPA
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q8073	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q8076	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 151 3304	TR 2SA608NF-NPA
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R

Schematic Location	Part No.	Description
Q8083	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 151 3304	TR 2SA608NF-NPA
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q8090	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 157 0505	TR 2SC536NF-NPA
	405 151 8705	TR 2SC536NG-NPA
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q8093	405 039 3303	TR 2SC3114-R
	405 039 3402	TR 2SC3114-S
	405 017 1901	TR 2SC3114-T
Q8097	405 039 3303	TR 2SC3114-R
	405 039 3402	TR 2SC3114-S
	405 017 1901	TR 2SC3114-T

NOTES:
Read description of the Resistor as follows:

(Example)

CARBON 4.7K J A 1/4W

- 1/4W — Rated Wattage
- A — Performance Symbols:
  A...General B...Non-flammable
  Z...Low noise
  Other... Temperature coefficient
- J — Tolerance Symbols:
  A...0.05% B...0.1% C...25%
  D...0.5% F...1% G...2%
  J...5% K...10% M...20%
  P...+5 -15%
- 4.7K — Rated Value, ohms:
  K...1,000 M...1,000,000
- CARBON — Material:
  CARBON .... Carbon
  MT-FILM .... Metal Film
  OXIDE-MT .... Oxide Metal Film
  SOLID ....Composition
  MT-GLAZE .... Metal Glaze
  WIRE WOUND .....Wire Wound
  CERAMIC RES ....Ceramic
  FUSIBLE RES ..... Fusible

Schematic Location	Part No.	Description		
R001	401 027 8602	CARBON	8.2K JA	1/6W
R002	401 027 8602	CARBON	8.2K JA	1/6W
R003	401 025 4200	CARBON	1.8K JA	1/6W
R004	401 025 4200	CARBON	1.8K JA	1/6W
R005	401 037 5608	MT-GLAZE	10K JA	1/10W
R006	401 023 1706	CARBON	820 JA	1/4W
R012	401 027 2600	CARBON	5.6K JA	1/6W
R101	401 026 6609	CARBON	390 JA	1/6W
★ R104	401 009 4806	CARBON	33 JA	1/2W
★ R105	401 011 1107	CARBON	68 JA	1/2W
R106	401 009 2000	CARBON	27K JA	1/2W
R133	401 037 6704	MT-GLAZE	1.2K JA	1/10W
R136	401 027 8305	CARBON	820 JA	1/6W
R137	401 038 9001	MT-GLAZE	680 JA	1/10W
R138	401 037 5004	MT-GLAZE	0.000 ZA	1/10W
R142	401 038 3702	MT-GLAZE	33K JA	1/10W
R143	401 037 5400	MT-GLAZE	1K JA	1/10W
R151	401 025 1308	CARBON	150 JA	1/6W
R159	401 025 7409	CARBON	220 JA	1/6W
R160	401 024 9008	CARBON	120 JA	1/6W
R161	401 037 9408	MT-GLAZE	180K JA	1/10W
R162	401 038 0909	MT-GLAZE	220K JA	1/10W
R163	401 038 0602	MT-GLAZE	220 JA	1/10W
R164	401 024 7004	CARBON	1K JA	1/6W
R165	401 024 9008	CARBON	120 JA	1/6W
R167	401 025 2305	CARBON	150K JA	1/6W
R168	401 038 2309	MT-GLAZE	270K JA	1/10W
R169	401 037 5400	MT-GLAZE	1K JA	1/10W
R202	401 024 7004	CARBON	1K JA	1/6W
R206	401 024 6700	CARBON	100 JA	1/6W
R207	401 037 5400	MT-GLAZE	1K JA	1/10W
R212	401 037 5806	MT-GLAZE	1M JA	1/10W
R216	401 037 5608	MT-GLAZE	10K JA	1/10W
R217	401 027 5908	CARBON	68K JA	1/6W
R221	401 037 5202	MT-GLAZE	100 JA	1/10W
R222	401 037 5400	MT-GLAZE	1K JA	1/10W
R223	401 038 0701	MT-GLAZE	2.2K JA	1/10W
R224	401 038 3504	MT-GLAZE	330 JA	1/10W
R225	401 038 3504	MT-GLAZE	330 JA	1/10W
R251	401 038 9209	MT-GLAZE	6.8K JA	1/10W
R252	401 038 2101	MT-GLAZE	2.7K JA	1/10W
R271	401 038 0800	MT-GLAZE	22K JA	1/10W
R272	401 038 3603	MT-GLAZE	3.3K JA	1/10W
R273	401 037 5608	MT-GLAZE	10K JA	1/10W
R276	401 037 6803	MT-GLAZE	12K JA	1/10W
R281	401 026 4308	CARBON	3.3K JA	1/6W
R287	401 037 9101	MT-GLAZE	180 JA	1/10W
R288	401 037 9101	MT-GLAZE	180 JA	1/10W
R289	401 037 9101	MT-GLAZE	180 JA	1/10W
R301	401 037 5400	MT-GLAZE	1K JA	1/10W
R302	401 037 7909	MT-GLAZE	1.5K JA	1/10W
R303	401 038 7700	MT-GLAZE	5.6K JA	1/10W
R304	401 037 5400	MT-GLAZE	1K JA	1/10W
R305	401 037 5202	MT-GLAZE	100 JA	1/10W
R306	401 024 7004	CARBON	1K JA	1/6W
R307	401 037 7909	MT-GLAZE	1.5K JA	1/10W
R308	401 037 5400	MT-GLAZE	1K JA	1/10W
R309	401 027 5205	CARBON	680 JA	1/6W
★ R310	401 010 2501	CARBON	47 JA	1/2W
★ R311	401 010 2501	CARBON	47 JA	1/2W
R312	401 039 0304	MT-GLAZE	820 JA	1/10W
R332	401 038 9001	MT-GLAZE	680 JA	1/10W
R333	401 037 7909	MT-GLAZE	1.5K JA	1/10W
R334	401 024 7004	CARBON	1K JA	1/6W
R341	401 024 7004	CARBON	1K JA	1/6W
R342	401 024 7004	CARBON	1K JA	1/6W
R343	401 038 0701	MT-GLAZE	2.2K JA	1/10W
R347	401 037 5608	MT-GLAZE	10K JA	1/10W
R348	401 037 5608	MT-GLAZE	10K JA	1/10W

Schematic Location	Part No.	Description
R349	401 024 7004	CARBON 1K JA 1/6W
R351	401 026 9600	CARBON 470 JA 1/6W
R352	401 038 0909	MT-GLAZE 220K JA 1/10W
R353	401 024 7400	CARBON 10K JA 1/6W
R371	401 037 5608	MT-GLAZE 10K JA 1/10W
R372	401 038 3702	MT-GLAZE 33K JA 1/10W
R373	401 038 9407	MT-GLAZE 680K JA 1/10W
R376	401 038 7809	MT-GLAZE 56K JA 1/10W
R377	401 038 7700	MT-GLAZE 5.6K JA 1/10W
R400	401 038 3801	MT-GLAZE 330K JA 1/10W
R401	401 017 0807	CARBON 270 JA 1/4W
R403	401 038 2101	MT-GLAZE 2.7K JA 1/10W
R404	401 026 3905	CARBON 330 JA 1/6W
R406	401 010 8305	CARBON 5.6K JA 1/2W
★ R407	401 068 4700	OXIDE-MT 4.7K JA 2W
R409	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
★ R413	402 067 3305	WIRE WOUND 4.7 KA 5W
	402 075 5704	WIRE WOUND 4.7 KA 5W
★ R418	401 009 1607	CARBON 2.7K JB 1/2W
★ R421	401 148 7201	MT-FILM 1.8K FA 1/6W
★ R422	401 052 6802	MT-FILM 10K FA 1/6W
★ R423	401 053 2605	MT-FILM 3.3K FA 1/6W
R426	401 038 9001	MT-GLAZE 680 JA 1/10W
R428	401 025 1902	CARBON 15K JA 1/6W
R460	401 024 9008	CARBON 120 JA 1/6W
R461	401 025 7409	CARBON 220 JA 1/6W
R467	401 010 8305	CARBON 5.6K JA 1/2W
R468	401 027 5205	CARBON 680 JA 1/6W
R471	401 027 5205	CARBON 680 JA 1/6W
R473	401 027 3003	CARBON 56K JA 1/6W
R474	401 025 4903	CARBON 180K JA 1/6W
R475	401 027 5205	CARBON 680 JA 1/6W
★ R480	401 009 0006	CARBON 27 JB 1/2W
★ R481	401 009 4905	CARBON 33 JB 1/2W
★ R482	401 011 9004	CARBON 1 JB 1/4W
★ R483	401 006 7701	CARBON 1 JB 1/2W
R485	401 037 9309	MT-GLAZE 18K JA 1/10W
★ R486	401 065 1801	OXIDE-MT 12 JA 2W
R487	401 026 6609	CARBON 390 JA 1/6W
★ R489	401 065 9609	OXIDE-MT 18 JA 2W
R491	401 012 5708	CARBON 1K JA 1/4W
R492	401 097 3903	MT-FILM 39K FA 1/6W
R493	401 018 5801	CARBON 330K JA 1/4W
R494	401 018 5801	CARBON 330K JA 1/4W
★ R497	401 064 5305	OXIDE-MT 1.5 JA 2W
★ R498	401 011 4306	CARBON 8.2 JA 1/2W
R503	401 027 2600	CARBON 5.6K JA 1/6W
R504	401 027 5502	CARBON 6.8K JA 1/6W
R505	401 006 8401	CARBON 1.5 JA 1/2W
R506	401 027 5205	CARBON 680 JA 1/6W
R507	401 006 8807	CARBON 1.8 JA 1/2W
R508	401 024 9701	CARBON 12K JA 1/6W
R509	401 027 5502	CARBON 6.8K JA 1/6W
★ R511	401 060 7402	OXIDE-MT 270 JA 1W
R517	401 025 4606	CARBON 18K JA 1/6W
R518	401 025 4606	CARBON 18K JA 1/6W
★ R601	402 083 6106	WIRE WOUND 1 KA 7W
★ R602	402 000 0705	SOLID 3.3M KA 1/2W
R603	401 007 2309	CARBON 100K JA 1/2W
★ R604	401 064 6302	OXIDE-MT 10 JA 2W
★ R613	401 068 6902	OXIDE-MT 56 JA 2W
R614	401 011 1107	CARBON 68 JA 1/2W
R615	401 014 5201	CARBON 15K JA 1/4W
R616	401 026 2809	CARBON 3K GA 1/6W
R617	401 099 1501	CARBON 680 GA 1/6W
★ R618	401 068 6902	OXIDE-MT 56 JA 2W
R619	401 025 8208	CARBON 22K JA 1/6W
R620	401 027 2600	CARBON 5.6K JA 1/6W
R621	401 026 9907	CARBON 4.7K JA 1/6W
R622	401 026 2809	CARBON 3K GA 1/6W
R627	401 037 5608	MT-GLAZE 10K JA 1/10W
R628	401 013 5301	CARBON 1.2K JA 1/4W
R629	401 024 7004	CARBON 1K JA 1/6W
★ R630	401 060 5002	OXIDE-MT 22K JA 1W
R631	401 022 3107	CARBON 6.8K JA 1/4W
R632	401 024 7004	CARBON 1K JA 1/6W
R634	401 027 0309	CARBON 47K JA 1/6W
R683	401 026 9907	CARBON 4.7K JA 1/6W
R686	401 016 1508	CARBON 22 JA 1/4W
R687	401 025 8208	CARBON 22K JA 1/6W
R688	401 037 6803	MT-GLAZE 12K JA 1/10W
R691	401 024 7400	CARBON 10K JA 1/6W
R692	401 027 5908	CARBON 68K JA 1/6W
R693	401 027 3201	CARBON 560K JA 1/6W
R694	401 024 7400	CARBON 10K JA 1/6W
R695	401 025 8208	CARBON 22K JA 1/6W
R701	401 025 3807	CARBON 180 JA 1/6W
R702	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R703	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R704	401 027 8107	CARBON 82 JA 1/6W
R706	401 009 1508	CARBON 2.7K JA 1/2W
★ R707	401 065 4604	OXIDE-MT 12K JA 2W
R711	401 025 3807	CARBON 180 JA 1/6W
R712	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R713	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R714	401 039 0205	MT-GLAZE 82 JA 1/10W
R716	401 009 1508	CARBON 2.7K JA 1/2W
★ R717	401 065 4604	OXIDE-MT 12K JA 2W
R721	401 025 3807	CARBON 180 JA 1/6W
R722	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R723	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R724	401 027 8107	CARBON 82 JA 1/6W
R726	401 009 1508	CARBON 2.7K JA 1/2W
★ R727	401 065 4604	OXIDE-MT 12K JA 2W
R803	401 037 5202	MT-GLAZE 100 JA 1/10W
R804	401 037 5202	MT-GLAZE 100 JA 1/10W
R806	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R807	401 037 5608	MT-GLAZE 10K JA 1/10W
R808	401 037 5608	MT-GLAZE 10K JA 1/10W
R809	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R811	401 025 1902	CARBON 15K JA 1/6W
R812	401 038 0800	MT-GLAZE 22K JA 1/10W
R813	401 037 5608	MT-GLAZE 10K JA 1/10W
R814	401 037 5608	MT-GLAZE 10K JA 1/10W
R816	401 038 3504	MT-GLAZE 330 JA 1/10W
R821	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R822	401 037 9101	MT-GLAZE 180 JA 1/10W
R823	401 024 9701	CARBON 12K JA 1/6W
R826	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R827	401 038 7700	MT-GLAZE 5.6K JA 1/10W
R828	401 026 4605	CARBON 33K JA 1/6W
R831	401 037 5707	MT-GLAZE 100K JA 1/10W

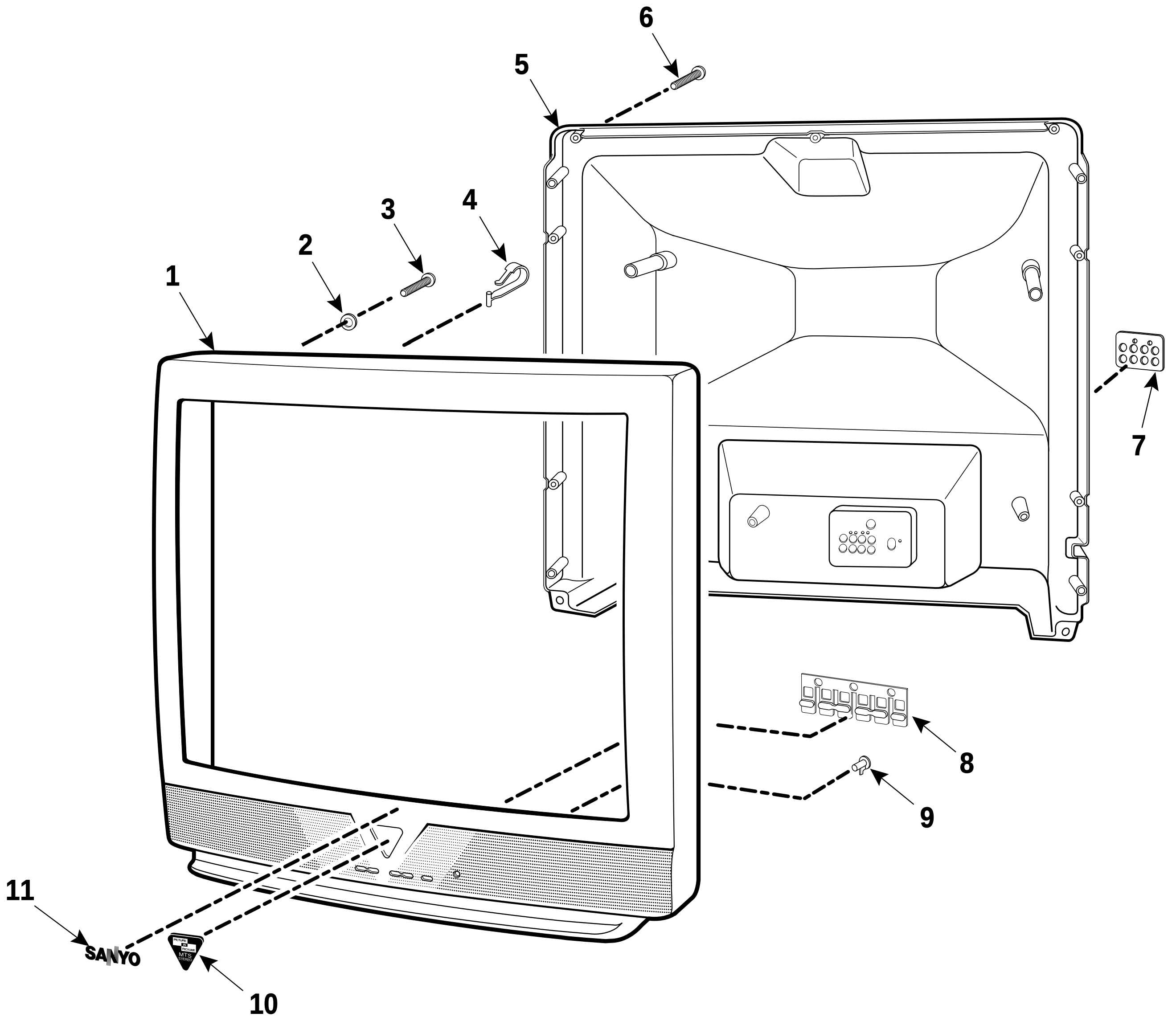
Schematic Location	Part No.	Description		
R833	401 024 7400	CARBON	10K JA	1/6W
R835	401 026 1000	CARBON	2.7K JA	1/6W
R842	401 027 2303	CARBON	560 JA	1/6W
R843	401 027 2303	CARBON	560 JA	1/6W
R844	401 027 2303	CARBON	560 JA	1/6W
R846	401 037 5400	MT-GLAZE	1K JA	1/10W
R847	401 027 2600	CARBON	5.6K JA	1/6W
R848	401 027 2600	CARBON	5.6K JA	1/6W
R849	401 027 2600	CARBON	5.6K JA	1/6W
R851	401 037 5400	MT-GLAZE	1K JA	1/10W
R852	401 038 5300	MT-GLAZE	39K JA	1/10W
R853	401 037 5806	MT-GLAZE	1M JA	1/10W
R854	401 038 0701	MT-GLAZE	2.2K JA	1/10W
R856	401 037 5202	MT-GLAZE	100 JA	1/10W
R857	401 037 5202	MT-GLAZE	100 JA	1/10W
R859	401 037 5608	MT-GLAZE	10K JA	1/10W
R862	401 024 6700	CARBON	100 JA	1/6W
R864	401 038 5300	MT-GLAZE	39K JA	1/10W
R872	401 025 1902	CARBON	15K JA	1/6W
R873	401 038 0800	MT-GLAZE	22K JA	1/10W
R881	401 037 5202	MT-GLAZE	100 JA	1/10W
R882	401 037 5202	MT-GLAZE	100 JA	1/10W
R883	401 024 6700	CARBON	100 JA	1/6W
R884	401 024 6700	CARBON	100 JA	1/6W
R886	401 024 7400	CARBON	10K JA	1/6W
R1001	401 027 8107	CARBON	82 JA	1/6W
R1002	401 027 8107	CARBON	82 JA	1/6W
R1006	401 026 9600	CARBON	470 JA	1/6W
R1007	401 038 6406	MT-GLAZE	4.7K JA	1/10W
R1011	401 027 6608	CARBON	75 JA	1/6W
R1012	401 038 2200	MT-GLAZE	27K JA	1/10W
R1013	401 024 9701	CARBON	12K JA	1/6W
R1021	401 027 8107	CARBON	82 JA	1/6W
R1022	401 027 8107	CARBON	82 JA	1/6W
R1026	401 038 6307	MT-GLAZE	470 JA	1/10W
R1027	401 038 6406	MT-GLAZE	4.7K JA	1/10W
R1031	401 027 6608	CARBON	75 JA	1/6W
R1032	401 038 2200	MT-GLAZE	27K JA	1/10W
R1033	401 037 6803	MT-GLAZE	12K JA	1/10W
R1041	401 038 0800	MT-GLAZE	22K JA	1/10W
R1042	401 038 0800	MT-GLAZE	22K JA	1/10W
R1046	401 037 5608	MT-GLAZE	10K JA	1/10W
R1047	401 038 2200	MT-GLAZE	27K JA	1/10W
R1048	401 037 5608	MT-GLAZE	10K JA	1/10W
R1049	401 038 2200	MT-GLAZE	27K JA	1/10W
R1071	401 038 6307	MT-GLAZE	470 JA	1/10W
R1081	401 025 8208	CARBON	22K JA	1/6W
R1082	401 038 0800	MT-GLAZE	22K JA	1/10W
R1093	401 037 6704	MT-GLAZE	1.2K JA	1/10W
R1094	401 037 6704	MT-GLAZE	1.2K JA	1/10W
R1095	401 037 5400	MT-GLAZE	1K JA	1/10W
R1096	401 024 7004	CARBON	1K JA	1/6W
R1901	401 024 7400	CARBON	10K JA	1/6W
R1902	401 024 7004	CARBON	1K JA	1/6W
R1903	401 037 9200	MT-GLAZE	1.8K JA	1/10W
R1904	401 038 0701	MT-GLAZE	2.2K JA	1/10W
R1905	401 038 5102	MT-GLAZE	3.9K JA	1/10W
R1906	401 038 7700	MT-GLAZE	5.6K JA	1/10W
R1907	401 037 6803	MT-GLAZE	12K JA	1/10W
R1909	401 024 7004	CARBON	1K JA	1/6W
R1910	401 024 7004	CARBON	1K JA	1/6W
R3401	401 038 0602	MT-GLAZE	220 JA	1/10W

Schematic Location	Part No.	Description		
R3402	401 038 0602	MT-GLAZE	220 JA	1/10W
R3406	401 037 5707	MT-GLAZE	100K JA	1/10W
R3407	401 037 5806	MT-GLAZE	1M JA	1/10W
R3411	401 152 9604	MT-GLAZE	62K FA	1/10W
R3421	401 038 3603	MT-GLAZE	3.3K JA	1/10W
R3422	401 038 3009	MT-GLAZE	3K JA	1/10W
R3426	401 038 5102	MT-GLAZE	3.9K JA	1/10W
R3432	401 037 5608	MT-GLAZE	10K JA	1/10W
R3433	401 037 5608	MT-GLAZE	10K JA	1/10W
R3434	401 038 7601	MT-GLAZE	560 JA	1/10W
R3435	401 037 5707	MT-GLAZE	100K JA	1/10W
R3436	401 038 7601	MT-GLAZE	560 JA	1/10W
R3437	401 037 5707	MT-GLAZE	100K JA	1/10W
R3441	401 038 3801	MT-GLAZE	330K JA	1/10W
R3442	401 037 5202	MT-GLAZE	100 JA	1/10W
R3443	401 038 3801	MT-GLAZE	330K JA	1/10W
R3444	401 037 5202	MT-GLAZE	100 JA	1/10W
R3445	401 038 3801	MT-GLAZE	330K JA	1/10W
R3446	401 037 5202	MT-GLAZE	100 JA	1/10W
R3447	401 038 3801	MT-GLAZE	330K JA	1/10W
R3448	401 037 5202	MT-GLAZE	100 JA	1/10W
R8001	401 069 6208	OXIDE-MT	82 JA	2W
R8002	401 064 7507	OXIDE-MT	100 JA	2W
R8003	401 027 0309	CARBON	47K JA	1/6W
R8004	401 038 6505	MT-GLAZE	47K JA	1/10W
R8005	401 038 6406	MT-GLAZE	4.7K JA	1/10W
R8006	401 038 6406	MT-GLAZE	4.7K JA	1/10W
R8009	401 026 9600	CARBON	470 JA	1/6W
R8011	401 038 7007	MT-GLAZE	51 JA	1/10W
R8012	401 038 2903	MT-GLAZE	300 JA	1/10W
R8013	401 037 5707	MT-GLAZE	100K JA	1/10W
R8014	401 039 0601	MT-GLAZE	820K JA	1/10W
R8015	401 038 0107	MT-GLAZE	2K JA	1/10W
R8036	401 037 5707	MT-GLAZE	100K JA	1/10W
R8037	401 037 8005	MT-GLAZE	15K JA	1/10W
R8043	401 037 8005	MT-GLAZE	15K JA	1/10W
R8044	401 037 8005	MT-GLAZE	15K JA	1/10W
R8055	401 038 4006	MT-GLAZE	360 JA	1/10W
R8056	401 038 6307	MT-GLAZE	470 JA	1/10W
R8061	401 037 8005	MT-GLAZE	15K JA	1/10W
R8065	401 037 5202	MT-GLAZE	100 JA	1/10W
R8066	401 026 9600	CARBON	470 JA	1/6W
R8071	401 038 0800	MT-GLAZE	22K JA	1/10W
R8072	401 038 0800	MT-GLAZE	22K JA	1/10W
R8073	401 037 5400	MT-GLAZE	1K JA	1/10W
R8074	401 037 5400	MT-GLAZE	1K JA	1/10W
R8076	401 038 2002	MT-GLAZE	270 JA	1/10W
R8077	401 038 9001	MT-GLAZE	680 JA	1/10W
R8081	401 038 3504	MT-GLAZE	330 JA	1/10W
R8082	401 038 9308	MT-GLAZE	68K JA	1/10W
R8083	401 038 3801	MT-GLAZE	330K JA	1/10W
R8084	401 037 5004	MT-GLAZE	0.000 ZA	1/10W
R8085	401 037 7909	MT-GLAZE	1.5K JA	1/10W
R8088	401 037 8005	MT-GLAZE	15K JA	1/10W
R8089	401 037 8005	MT-GLAZE	15K JA	1/10W
R8090	401 025 8208	CARBON	22K JA	1/6W
R8091	401 037 5608	MT-GLAZE	10K JA	1/10W
R8092	401 037 9309	MT-GLAZE	18K JA	1/10W
R8093	401 038 6505	MT-GLAZE	47K JA	1/10W
R8095	401 037 5608	MT-GLAZE	10K JA	1/10W
R8096	401 037 9309	MT-GLAZE	18K JA	1/10W
R8097	401 038 6505	MT-GLAZE	47K JA	1/10W

Schematic Location	Part No.	Description
		SWITCHES
SW1901	645 027 7382	SWITCH, PUSH (POWER)
SW1902	645 027 7382	SWITCH, PUSH (VOL +)
SW1903	645 027 7382	SWITCH, PUSH (VOL –)
SW1904	645 027 7382	SWITCH, PUSH (CH ▲)
SW1905	645 027 7382	SWITCH, PUSH (CH ▼)
SW1906	645 027 7382	SWITCH, PUSH (MENU)
		TRANSFORMERS
T131	645 027 6095	TRANS, IF 4.5MHZ
T151	645 027 6088	TRANS, OSC 45.75MHZ
T401	610 000 1138	DRIVE TRANS
	610 223 1663	DRIVE TRANS
★ T402	645 032 8978	TRANS, FLYBACK
	645 018 9579	TRANS, FLYBACK
★ T601	645 035 9910	TRANS, POWER, PULSE
	645 040 1527	TRANS, POWER, PULSE
		CRYSTALS/FILTERS
X141	421 006 3206	SAW F TSF5221P
	421 008 9008	SAW F TSF5235P
	421 009 2909	SAW F TSF5235P2
X153	610 015 2946	CERAMIC FILTER 4.5MHZ
	645 030 1049	CERAMIC FILTER 4.5MHZ
	645 041 1656	CERAMIC FILTER 4.5MHZ
X161	610 015 3059	TRAP, CERAMIC 4.5MHZ
	645 041 1618	TRAP CERAMIC 4.5MHZ
X251	610 204 4195	CRYSTAL OSCILLATOR
	610 245 9746	CRYSTAL OSCILLATOR
	610 012 0655	CRYSTAL OSCILLATOR
X401	645 020 9147	OSC, CERAMIC 507.5KHZ
	645 033 1596	OSC, CERAMIC 503KHZ
X801	645 000 6692	OSC, CERAMIC 8.00MHZ
	645 021 5483	OSC, CERAMIC 8.00MHZ
X8011	645 041 1564	OSC, CRYSTAL 14.31818MHZ

Schematic Location	Part No.	Description
		MISCELLANEOUS
A100	610 291 9394	ASSY, PWB, MAIN
★ A101	645 040 5150	TUNER, U/V
A700	610 281 9472	ASSY, PWB, SOCKET
A1000	610 281 9465	ASSY, PWB, AV
A1901	645 027 4213	UNIT, REMOCON RECEIVER
★ F601	423 018 8101	FUSE 125V 4A
	423 007 1601	FUSE 125V 4A
	423 007 1809	FUSE 125V 4A
F601A	645 000 5077	HOLDER, FUSE
	645 016 0479	HOLDER, FUSE
F601B	645 000 5077	HOLDER, FUSE
	645 016 0479	HOLDER, FUSE
★ K701	645 025 6103	SOCKET, CRT 8P
K1001	645 032 1979	JACK, RCA-3
K1002	645 032 1979	JACK, RCA-3
K1011	610 010 3665	JACK, RCA
K1021	610 010 3672	JACK, RCA
K1051	610 010 8295	SOCKET, DIN 4P
K1051	610 010 8295	SOCKET, DIN 4P
K1052	610 010 8295	SOCKET, DIN 4P
★ PS601	408 038 5606	TH451A300BG3R0Q140
	408 041 8205	TH451A3R0Q11
★ Q900	414 010 6905	CRT M78JUA361X72
★ RL601	645 000 4155	RELAY
	645 011 2713	RELAY
	645 024 7828	RELAY
	645 015 8629	RELAY
	645 024 7767	RELAY
SP901	645 013 6306	SPEAKER, 8
SP902	645 013 6306	SPEAKER, 8
VR461	645 003 5531	VR, SEMI, 10K N (H-WIDTH)
	645 011 6988	VR, SEMI, 10K N
	645 019 6003	VR, SEMI, 10K N
★ W601	645 034 8518	CORD, POWER-
★ W900	610 264 8362	ASSY, WIRE GND CONNECTOR
	610 267 0325	(MEX) GND CONNECTOR

CABINET PARTS LIST



CABINET PARTS LIST

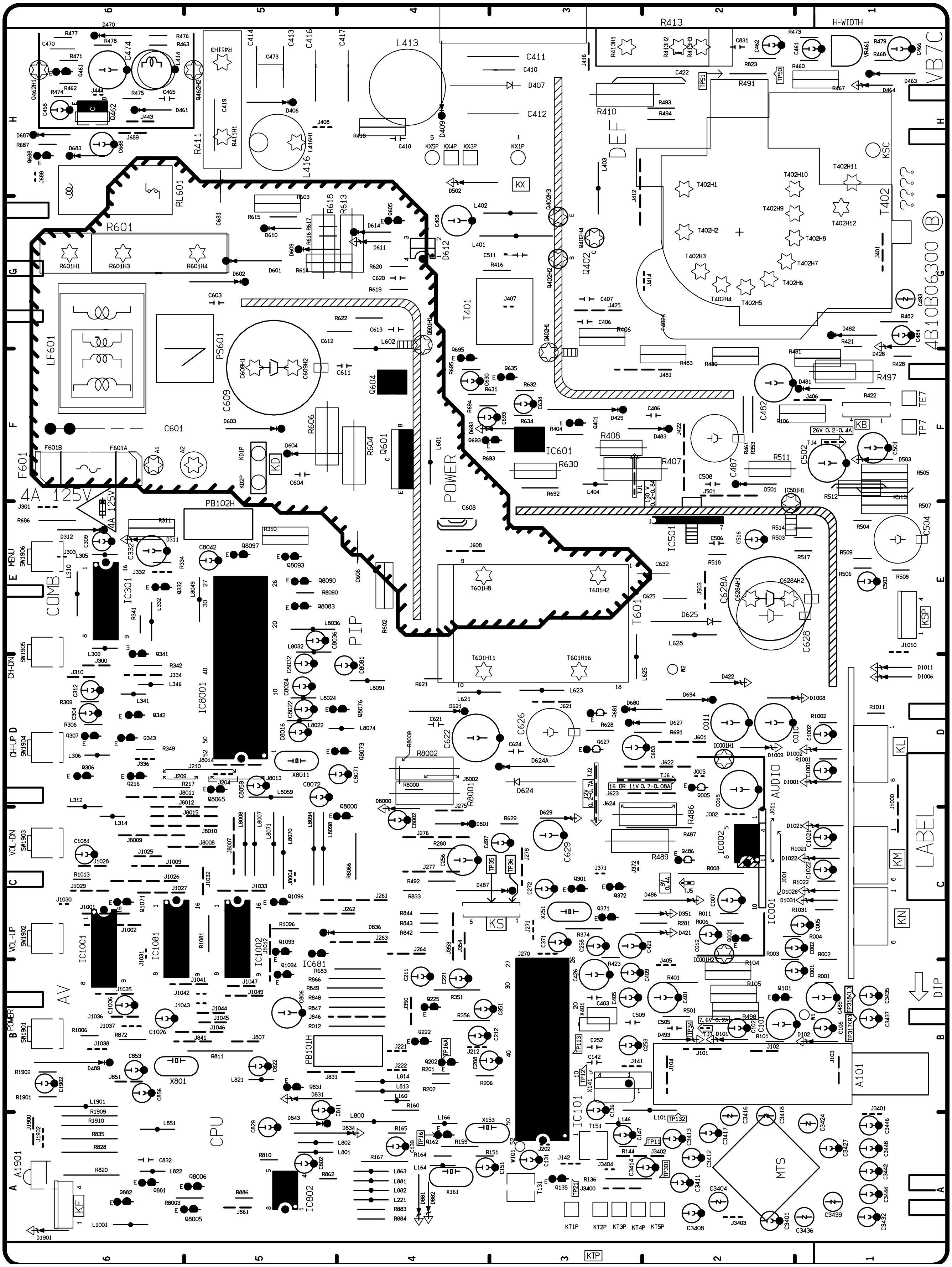
KEY NO.	PARTS NO.	DESCRIPTION
1	610 291 6713	CABINET FRONT ASSY
2A	610 268 9679	CRT MTG WASHER 2.5MM(2-TOP)
2B	610 268 9648	CRT MTG WASHER 2.0MM (2-BOT)
3	412 053 3905	CRT MTG SCREW 6X35 (4 USED)
4	610 102 7151	DC HOLDER (4 USED)
5	610 281 4163	CABINET BACK
6	412 036 1805	SCREW 4X14 (12 USED)
7	610 283 6813	DEC AV SHEET
8	610 291 6706	BUTTON UNIT
9	610 265 3786	CAP RC
10	610 291 6720	DEC SHEET
11	610 293 2560	SANYO BADGE

ACCESSORY PARTS LIST

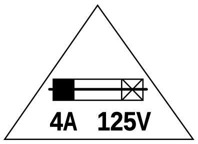
KEY NO.	PARTS NO.	DESCRIPTION
	610 291 8472	OWNER'S MANUAL
	645 045 9306	RC TRANSMITTER
	610 271 7143	RC BATTERY COVER

COMPONENT AND TESTPOINT LOCATIONS

MAIN BOARD PARTS SIDE



CAUTION



FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE 4A, 125V FUSE.

ATTENTION : POUR MAINTENIR LA PROTECTION CONTRE LES RISQUES D' INCENDIE UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE 4A, 125V.

MAIN BOARD COMPONENTS AND TEST POINTS GRID LOCATIONS

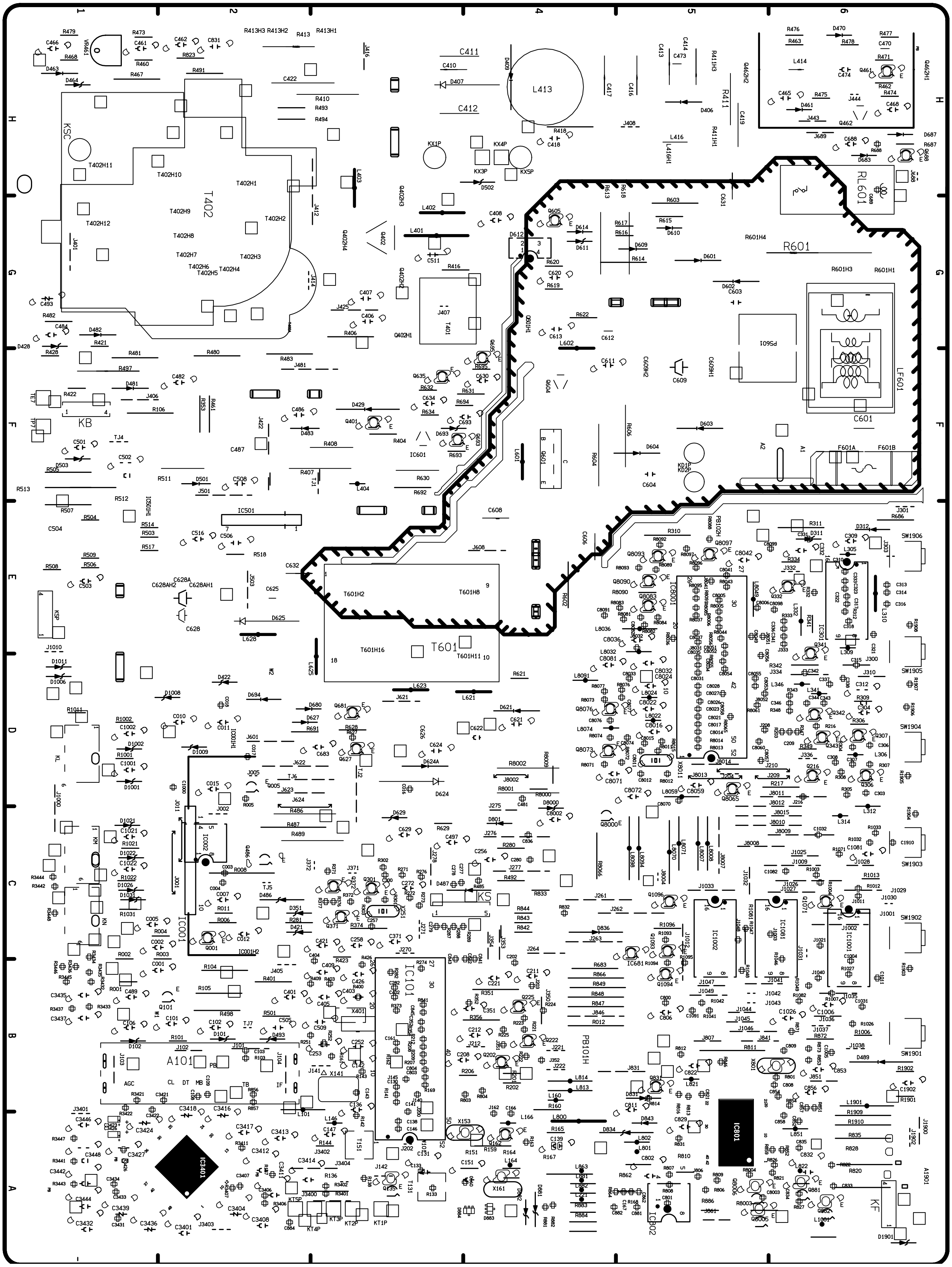
Part	Loc.	Part	Loc.	Part	Loc.
D312	E6	Q307	D6	Q1096	C5
D429	F3	Q332	E6	Q8000	C4
D612	G4	Q341	D6	Q8005	A5
IC002	C2	Q342	D6	Q8006	A5
IC101	B3	Q343	D6	Q8065	D5
IC301	E6	Q371	C3	Q8073	D4
IC501	E2	Q372	C3	Q8076	D4
IC601	F3	Q401	F3	Q8083	E5
IC681	C5	Q402	G3	Q8090	E5
IC801	A5	Q461	H6	Q8093	E5
IC802	A5	Q462	H6	Q8097	E5
IC1001	C6	Q486	C2	R513	F1
IC1002	C5	Q601	F4	TE7	F1
IC1081	C6	Q604	F4	TP7	F1
IC3401	A2	Q605	G4	TJ1	F3
IC8001	D5	Q627	D3	TJ5	C2
Q001	C2	Q635	F3	TJ7	B2
Q005	D2	Q681	D3	TP16A	B4
Q101	B2	Q688	H6	TP20	A3
Q135	A3	Q693	F3	TP50	H2
Q162	A4	Q695	F4	TP51	H2
Q202	B4	Q831	B5	TP113	B3
Q216	D6	Q881	A6	TP317	B1
Q222	B4	Q882	A6	TP318	B1
Q225	B4	Q1071	C6	T131	A3
Q301	C3	Q1093	C5	T151	A3
Q306	D6	Q1094	B5	VR461	H1

PIC TUBE SOCKET BOARD COMPONENTS

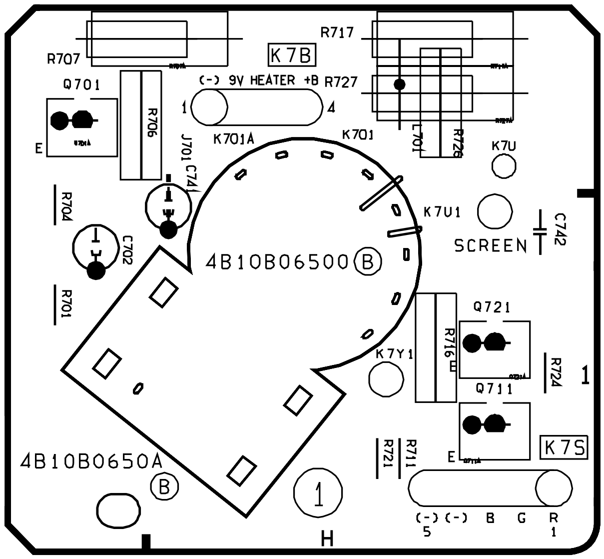
Part	Loc.
Q701	N/A
Q711	N/A
Q721	N/A

COMPONENT AND TESTPOINT LOCATIONS (Cont.)

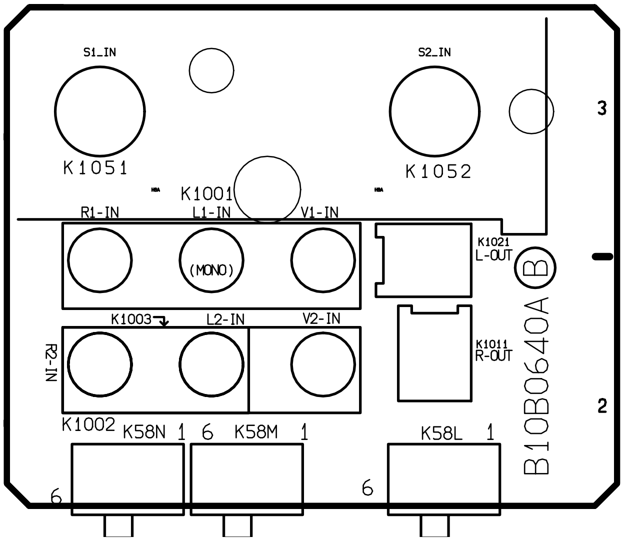
MAIN BOARD FOIL SIDE



PICTURE TUBE SOCKET BOARD



A/V BOARD



For parts or service contact

SANYO Fisher Service Corporation

21605 Plummer Street
Chatsworth, CA 91311 (U.S.A.)

300 Applewood Crescent,
Concord, Ontario L4K 5C7 (CANADA)

May / 2001 / 2200 SMC

Printed in U.S.A.

MODEL DS31810 Chassis No. 31810-00

SCHEMATIC DIAGRAMS

NOTES ON SCHEMATIC DIAGRAMS

1. All resistance values in ohms K=1,000 M=1,000,000.
2. Unless otherwise noted on schematic, all capacitor values less than 1 are expressed in µF (Micro Farad), and the values more than 1 are in pF.
3. Unless otherwise noted on schematic, voltage reading taken with VOM from point indicated to chassis ground. Voltage reading taken using color-bar signal VHF channel 5, all controls at normal. Line voltage at 120 volts. Some voltages may vary with signal strength.
4. Waveforms were taken with color-bar signal and controls adjusted for normal picture. Waveforms marked with an ✻ may vary with signal strength.
5. The Symbol (fusible resistor symbol) indicates a fusible resistor, which protects the circuit from possible short circuits.

SERVICE NOTES:

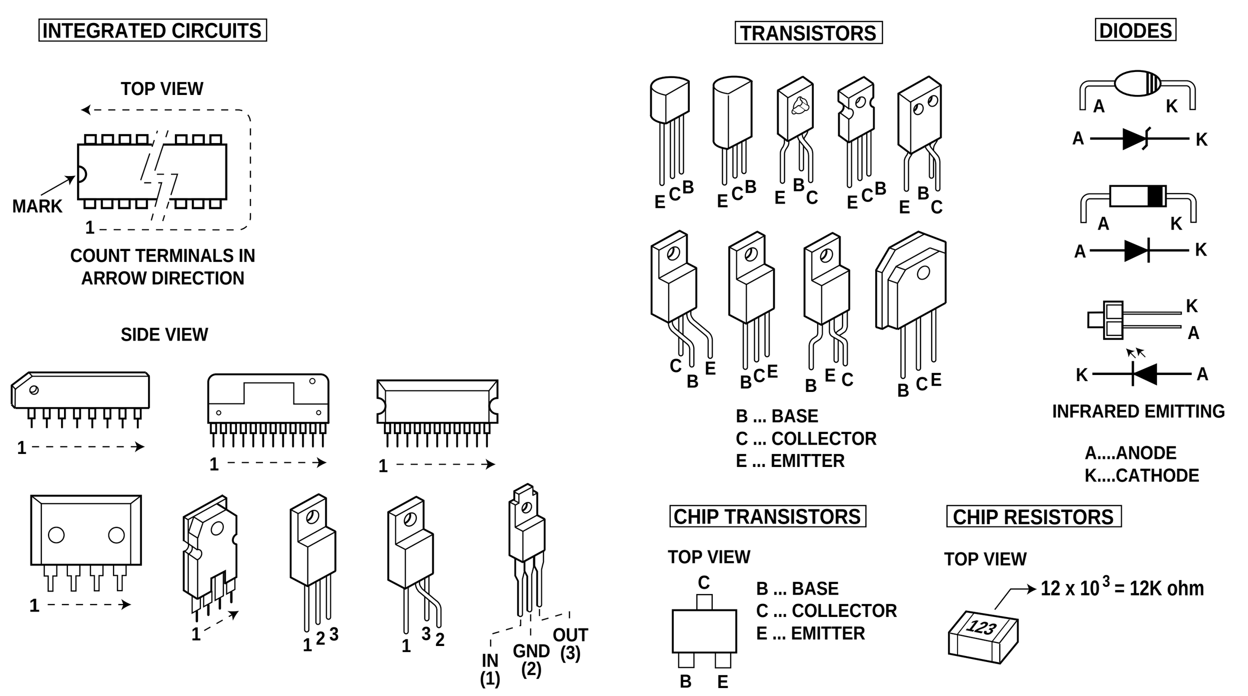
1. When replacing parts on circuit boards, clamp the lead wires to terminals before soldering.
2. When replacing high wattage resistors on circuit board, keep the resistor body 10 mm (3/8) from circuit board.
3. Keep wires away from high voltage and high temperature components.

PRODUCT SAFETY NOTICE

THE COMPONENTS DESIGNATED BY A STAR (★) ON THIS SCHEMATIC DIAGRAM DESIGNATE COMPONENTS WHOSE VALUES ARE OF SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. SHOULD ANY COMPONENT DESIGNATED BY A STAR NEED TO BE REPLACED, USE ONLY THE PART DESIGNATED IN THE PARTS LIST. DO NOT DEVIATE FROM THE RESISTANCE, WATTAGE AND VOLTAGE RATINGS SHOWN.

X-RADIATION WARNING NOTE

THIS TV CONTAINS CRITICAL PARTS TO PROTECT AGAINST X-RADIATION. NOMINAL 2ND ANODE VOLTAGE IS 32.0KV AT ZERO BEAM CURRENT AT 120 VOLTS AC LINE, AND MUST NOT EXCEED 33.0KV UNDER ANY OPERATING CONDITION. SEE HIGH VOLTAGE CHECK ON PAGE 7.



CAPACITOR AND RESISTOR CODE CHART

CAPACITOR (Example)

500 C K 1500 B

- 500 — Voltage rating
- C — Material code
- K — Tolerance code
- 1500 — Value code
- B — Characteristics

Tolerance code:
- D .... ±0.5pF
- T .... +50% –10%
- J .... ±5%
- K .... ±10%
- M .... ±20%
- N .... ±30%
- P .... +100% –0%
- Z .... +80% –20%
- C .... ±0.25pF

Material code:
- C .... Ceramic
- E .... Electrolytic
- F .... Polyester
- N .... Polypropylene
- T .... Tantalum
- K .... Ceramic
- H .... MT-Composite
- P .... NP. Electrolytic
- M .... MT-Polypropylene

RESISTOR (Example)

6 Y K 4.7

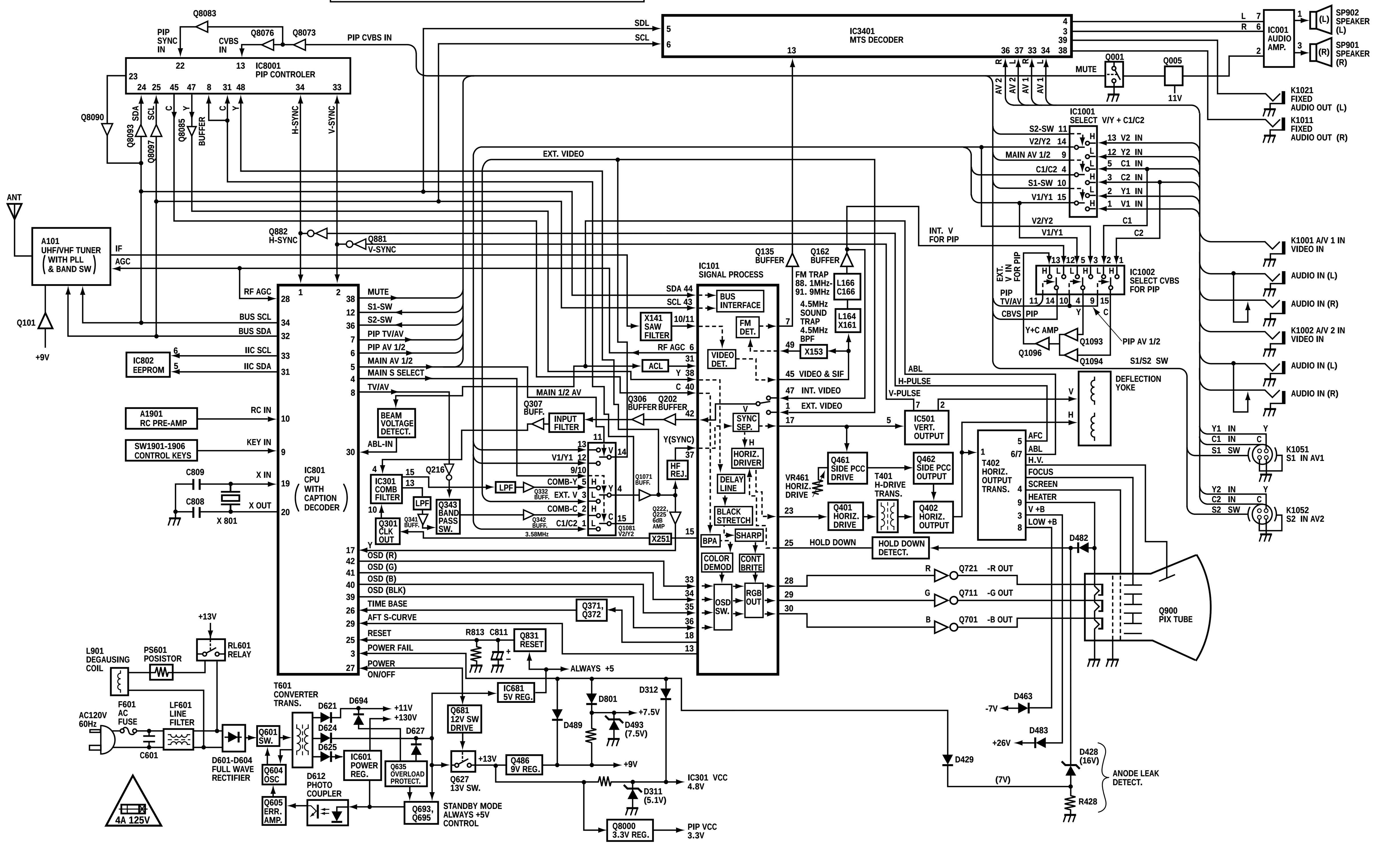
- 6 — Wattage rating
- Y — Material code
- K — Tolerance code
- 4.7 — Value code

Tolerance code:
- D .... ±0.5%
- F .... ±1%
- G .... ±2%
- J .... ±5%
- K .... ±10%
- M .... ±20%

Material code:
- F .... Fusible
- N .... Metalized Carbon
- S .... Oxide Metalized
- Y .... Wire Wound
- C .... Solid
- D .... Carbon Film
- W .... Wire Wound

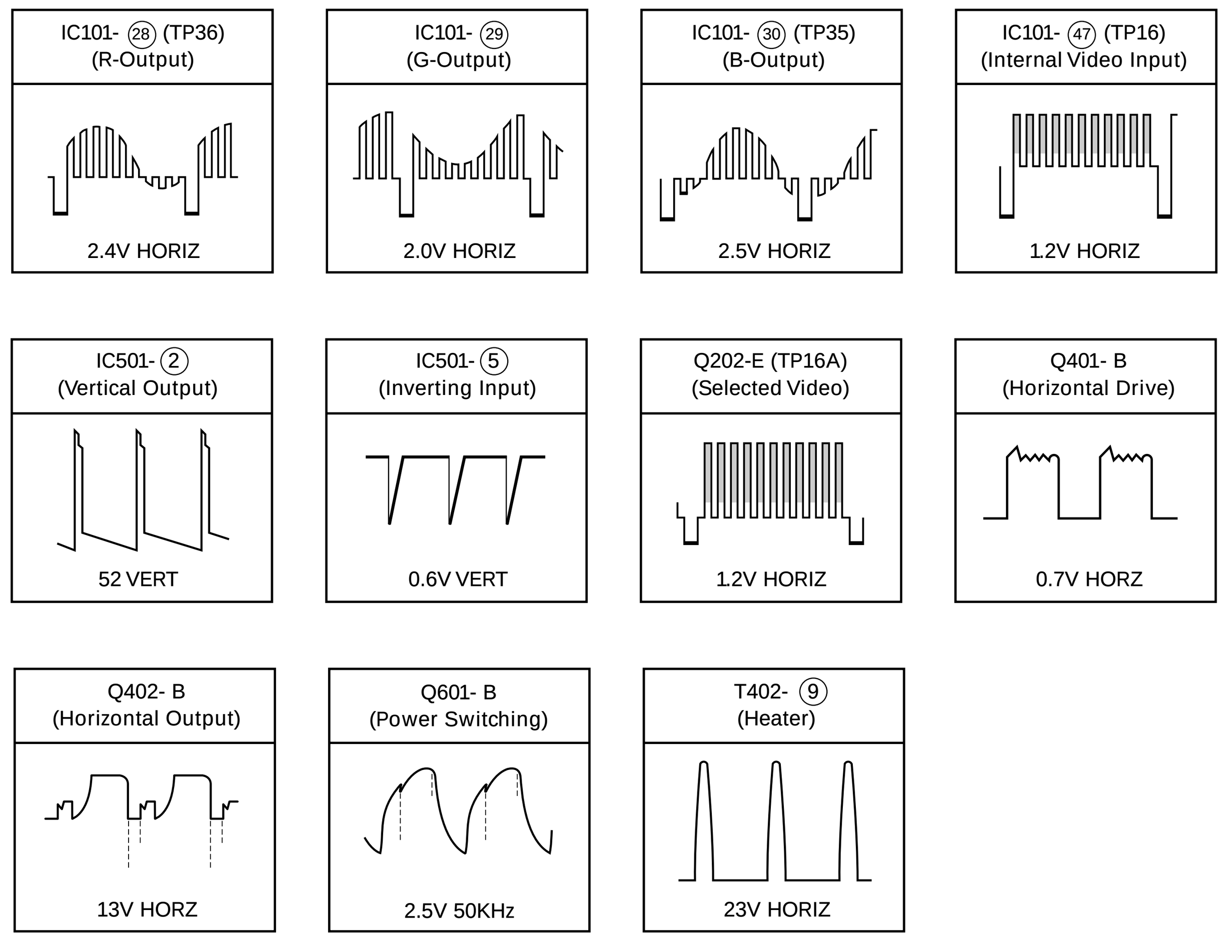
BLOCK DIAGRAM

CAUTION: FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE 4A, 125V FUSE. ATTENTION: POUR MAINTENIR LA PROTECTION CONTRE LES RISQUES D' INCENDIE UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE 4A, 125V.



WAVEFORMS

NOTE: Waveforms were taken with color bar signal and the controls adjusted for normal picture.



VOLTAGE CHARTS

NOTE: Voltages were measured using color bar signal and the controls adjusted for normal picture.

Device/Pin #	Volts/Mode
D612-1	POWER ON: 31.6 / POWER OFF: N/A
D612-2	POWER ON: 30.7 / POWER OFF: N/A
D612-3	POWER ON: –.3 / POWER OFF: 0.6
D612-4	POWER ON: 7.5 / POWER OFF: 1.1
IC002-1	7.7
IC002-2	11.0
IC002-3	7.7
IC002-4	GND
IC002-5	N.C.
IC002-6	1.4
IC002-7	1.4
IC002-8	GND
IC101-1	1.6
IC101-2	6.8
IC101-3	6.8
IC101-4	7.6
IC101-5	3.9
IC101-6	1.7
IC101-7	3.4
IC101-8	1.3
IC101-9	GND
IC101-10	3.8
IC101-11	3.8
IC101-12	5.0
IC101-13	3.4
IC101-14	5.8
IC101-15	4.0
IC101-16	3.5
IC101-17	3.8
IC101-18	6.2
IC101-19	4.6
IC101-20	GND
IC101-21	7.5
IC101-22	5.2
IC101-23	0.6
IC101-24	0.8
IC101-25	0
IC101-26	7.6
IC101-27	GND
IC101-28	2.8
IC101-29	2.7
IC101-30	2.8
IC101-31	4.8
IC101-32	7.6
IC101-33	3.5
IC101-34	3.5
IC101-35	3.5
IC101-36	0.4
IC101-37	5.1
IC101-38	3.5
IC101-39	3.6

Device/Pin #	Volts/Mode
IC101-40	3.3
IC101-41	3.2
IC101-42	4.2
IC101-43	3.3
IC101-44	3.3
IC101-45	3.5
IC101-46	GND
IC101-47	4.3
IC101-48	3.9
IC101-49	2.5
IC101-50	3.8
IC101-51	N.C.
IC101-52	4.6
IC301-1	GND
IC301-2	2.2
IC301-3	2.7
IC301-4	2.2
IC301-5	1.3
IC301-6	0
IC301-7	0
IC301-8	4.9
IC301-9	0
IC301-10	2.2
IC301-11	2.2
IC301-12	3.4
IC301-13	3.7
IC301-14	1.8
IC301-15	2.7
IC301-16	4.9
IC501-1	GND
IC501-2	14.4
IC501-3	27.1
IC501-4	3.8
IC501-5	3.8
IC501-6	26.2
IC501-7	2.8
IC601-1	GND
IC601-2	POWER ON: 30.7 / POWER OFF: N/A
IC601-3	POWER ON: 129 / POWER OFF: 74.7
IC681-1 (IN)	POWER ON: 11.6 / POWER OFF: 7.3
IC681-2	GND
IC681-3 (OUT)	POWER ON: 5.0 / POWER OFF: 5.0
IC801-1	4.1
IC801-2	4.73
IC801-3	4.9
IC801-4	0
IC801-5	0
IC801-6	0
IC801-7	0
IC801-8	TV: 0 / AV: 4.4
IC801-9	0

Device/Pin #	Volts/Mode
IC801-10	5.0
IC801-11	0.2
IC801-12	4.8
IC801-13	0.3
IC801-14	5.0
IC801-15	2.1
IC801-16	0.2
IC801-17	2.2
IC801-18	GND
IC801-19	2.2
IC801-20	2.0
IC801-21	GND
IC801-22	5.0
IC801-23	N.C.
IC801-24	GND
IC801-25	5.0
IC801-26	3.5
IC801-27	POWER ON: 4.9 / POWER OFF: 0
IC801-28	1.7
IC801-29	2.1
IC801-30	0
IC801-31	4.9
IC801-32	3.4
IC801-33	4.9
IC801-34	3.6
IC801-35	5.0
IC801-36	5.0
IC801-37	5.0
IC801-38	GND
IC801-39	0.3
IC801-40	0
IC801-41	0
IC801-42	0
IC802-1	GND
IC802-2	GND
IC802-3	GND
IC802-4	GND
IC802-5	4.9
IC802-6	4.9
IC802-7	GND
IC802-8	5.0
IC1001-1	2.7
IC1001-2	0.9
IC1001-3	6.3
IC1001-4	6.2
IC1001-5	6.2
IC1001-6	GND
IC1001-7	GND
IC1001-8	GND
IC1001-9	0
IC1001-10	8.0
IC1001-11	8.0
IC1001-12	2.5
IC1001-13	2.4

Device/Pin #	Volts/Mode
IC1001-14	2.4
IC1001-15	2.7
IC1001-16	9.1
IC1002-1	6.3
IC1002-2	6.2
IC1002-3	2.4
IC1002-4	2.7
IC1002-5	2.7
IC1002-6	GND
IC1002-7	GND
IC1002-8	GND
IC1002-9	0
IC1002-10	0
IC1002-11	0
IC1002-12	6.0
IC1002-13	6.2
IC1002-14	6.0
IC1002-15	6.2
IC1002-16	9.1
IC1081-1	6.2
IC1081-2	1.7
IC1081-3	2.7
IC1081-4	2.6
IC1081-5	2.6
IC1081-6	GND
IC1081-7	GND
IC1081-8	GND
IC1081-9	0
IC1081-10	0
IC1081-11	0
IC1081-12	2.7
IC1081-13	2.4
IC1081-14	2.7
IC1081-15	1.7
IC1081-16	9.1
IC3401-1	4.1
IC3401-2	4.1
IC3401-3	4.1
IC3401-4	4.1
IC3401-5	3.4
IC3401-6	3.3
IC3401-7	GND
IC3401-8	4.1
IC3401-9	4.1
IC3401-10	4.1
IC3401-11	4.1
IC3401-12	4.9
IC3401-13	4.1
IC3401-14	1.3
IC3401-15	1.3
IC3401-16	0
IC3401-17	GND
IC3401-18	3.6
IC3401-19	9.1
IC3401-20	0
IC3401-21	4.1

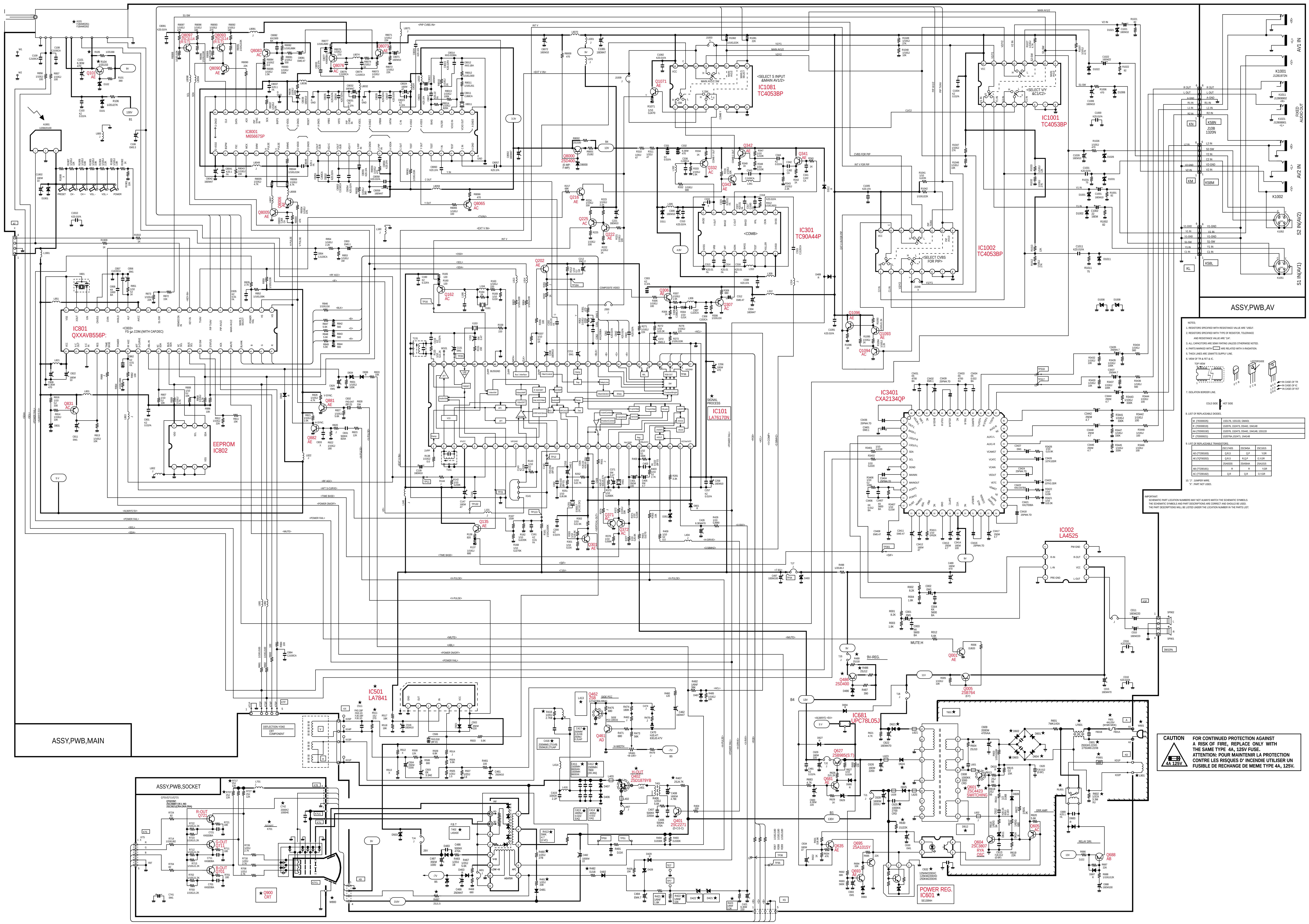
Device/Pin #	Volts/Mode
IC3401-22	4.1
IC3401-23	3.7
IC3401-24	4.0
IC3401-25	4.1
IC3401-26	4.1
IC3401-27	4.1
IC3401-28	1.9
IC3401-29	4.1
IC3401-30	4.1
IC3401-31	2.0
IC3401-32	4.1
IC3401-33	4.1
IC3401-34	4.1
IC3401-35	4.1
IC3401-36	4.1
IC3401-37	4.1
IC3401-38	4.1
IC3401-39	4.1
IC3401-40	4.1
IC3401-41	4.1
IC3401-42	GND
IC3401-43	4.1
IC3401-44	4.1
IC3401-45	4.1
IC3401-46	GND
IC3401-47	4.1
IC3401-48	4.1
IC8001-1	GRD
IC8001-2	2.1
IC8001-3	1.6
IC8001-4	1.8
IC8001-5	1.6
IC8001-6	3.2
IC8001-7	3.2
IC8001-8	0.9
IC8001-9	1.4
IC8001-10	0.5
IC8001-11	GND
IC8001-12	3.2
IC8001-13	0.8
IC8001-14	1.4
IC8001-15	0.5
IC8001-16	GRD
IC8001-17	3.1
IC8001-18	GRD
IC8001-19	3.1
IC8001-20	N.C.
IC8001-21	0
IC8001-22	0.2
IC8001-23	0.1
IC8001-24	0.3
IC8001-25	2.2
IC8001-26	GND
IC8001-27	3.1
IC8001-28	N.C.
IC8001-29	0

Device/Pin #	Volts/Mode
IC8001-30	GND
IC8001-31	N.C.
IC8001-32	0.4
IC8001-33	0.3
IC8001-34	3.1
IC8001-35	3.1
IC8001-36	GND
IC8001-37	3.0
IC8001-38	0.9
IC8001-39	2.9
IC8001-40	1.2
IC8001-41	1.2
IC8001-42	GND
IC8001-43	0.9
IC8001-44	3.2
IC8001-45	0.9
IC8001-46	3.2
IC8001-47	1.0
IC8001-48	GND
IC8001-49	1.0
IC8001-50	GND
IC8001-51	0.9
IC8001-52	GND
Q001-B	POWER ON: 0 / POWER OFF: 0.7
Q001-C	POWER ON: 7.7 / POWER OFF: 0
Q001-E	GND
Q005-B	10.3
Q005-C	11.0
Q005-E	11.0
Q101-B	5.7
Q101-C	6.9
Q101-E	5.0
Q135-B	3.6
Q135-C	7.6
Q135-E	3.0
Q162-B	3.6
Q162-C	GND
Q162-E	4.3
Q202-B	4.2
Q202-C	7.6
Q202-E	3.5
Q216-B	TV:0 / AV: 0.6
Q216-C	TV:0.7 / AV: 0
Q216-E	GND
Q222-B	1.9
Q222-C	6.1
Q222-E	1.3
Q225-B	6.1
Q225-C	2.1
Q225-E	6.8
Q301-B	0.6
Q301-C	4.1
Q301-E	GND

Device/Pin #	Volts/Mode
Q306-B	3.5
Q306-C	9.1
Q306-E	2.9
Q307-B	1.1
Q307-C	GND
Q307-E	1.8
Q332-B	2.1
Q332-C	GND
Q332-E	2.7
Q341-B	3.7
Q341-C	4.8
Q341-E	2.9
Q342-B	2.4
Q342-C	4.8
Q342-E	1.8
Q343-B	TV: 0.7 / AV: 0
Q343-C	TV: 0 / AV: 0
Q343-E	GND
Q371-B	6.1
Q371-C	GND
Q371-E	3.5
Q372-B	3.0
Q372-C	3.5
Q372-E	3.5
Q401-B	0.4
Q401-C	37.3
Q401-E	GND
Q402-B	3.8
Q402-C	128.4
Q402-E	3.8
Q461-B	0.6
Q461-C	9.2
Q461-E	GND
Q462-B	9.2
Q462-C	GND
Q462-E	9.8
Q486-B	9.9
Q486-C	10.1
Q486-E	9.1
Q601-B	POWER ON: –0.3 / POWER OFF: 0
Q601-C	POWER ON: 161.4 / POWER OFF: 169.6
Q601-E	GND
Q604-B	POWER ON: –1.6 / POWER OFF: 0.6
Q604-C	POWER ON: –0.3 / POWER OFF: 0
Q604-E	GND
Q605-B	POWER ON: 7.7 / POWER OFF: 1.2
Q605-C	POWER ON: –0.3 / POWER OFF: 0.6
Q605-E	POWER ON: 8.1 / POWER OFF: 1.8

Device/Pin #	Volts/Mode
Q627-B	POWER ON: 10.8 / POWER OFF: 7.3
Q627-C	POWER ON: 11.4 / POWER OFF: 0.1
Q627-E	POWER ON: 11.6 / POWER OFF: 7.3
Q635-B	POWER ON: 4.0 / POWER OFF: 1.3
Q635-C	POWER ON: 30.5 / POWER OFF: 9.3
Q635-E	POWER ON: 4.0 / POWER OFF: 1.3
Q681-B	POWER ON: 0.7 / POWER OFF: 0
Q681-C	POWER ON: 0 / POWER OFF: 7.3
Q681-E	GND
Q688-B	POWER ON: 11.4 / POWER OFF: 0.1
Q688-C	POWER ON: 0 / POWER OFF: 0
Q688-E	POWER ON: 11.4 / POWER OFF: 0.1
Q693-B	POWER ON: 0.5 / POWER OFF: 6.2
Q693-C	POWER ON: 30.7 / POWER OFF: 9.3
Q693-E	POWER ON: 0.7 / POWER OFF: 5.7
Q695-B	POWER ON: 30.7 / POWER OFF: 9.0
Q695-C	GND
Q695-E	POWER ON: 30.8 / POWER OFF: 9.3
Q701-B	3.0
Q701-C	147
Q701-E	2.6
Q711-B	3.0
Q711-C	144
Q711-E	2.8
Q721-B	2.7
Q721-C	143
Q721-E	2.6
Q831-B	4.3
Q831-C	4.9
Q831-E	4.9
Q881-B	0
Q881-C	4.7
Q881-E	GND
Q882-B	0
Q882-C	4.5
Q882-E	GND
Q1071-B	2.6
Q1071-C	9.1
Q1071-E	1.9

Device/Pin #	Volts/Mode
Q1093-B	6.2
Q1093-C	6.9
Q1093-E	5.5
Q1094-B	2.7
Q1094-C	GND
Q1094-E	3.4
Q1096-B	6.9
Q1096-C	9.1
Q1096-E	6.2
Q8000-B	3.9
Q8000-C	4.2
Q8000-E	3.2
Q8005-B	0.6
Q8005-C	0.3
Q8005-E	GND
Q8006-B	0.6
Q8006-C	0.2
Q8006-E	GND
Q8065-B	1.0
Q8065-C	GND
Q8065-E	1.7
Q8073-B	4.3
Q8073-C	9.0
Q8073-E	0
Q8076-B	3.7
Q8076-C	GND
Q8076-E	4.4
Q8083-B	2.9
Q8083-C	0.2
Q8083-E	3.1
Q8090-B	0
Q8090-C	3.4
Q8090-E	GND
Q8093-B	1.8
Q8093-C	2.1
Q8093-E	0
Q8097-B	1.9
Q8097-C	2.2
Q8097-E	3.3


ASSY,PWB,MAIN
ASSY,PWB,AV
ASSY,PWB,SOCKET
IC8001 M65667SP
IC801 QXXAVB556P
EEPROM IC802
IC101 LA76120N
IC301 TC90A44P
IC1081 TC4053BP
IC1001 TC4053BP
IC1002 TC4053BP
IC3401 CXA2134QP
IC002 LA4525
IC501 LA7841
IC681 UPC78L05J
POWER REG. IC601
S1 IN(AV1)
S2 IN(AV2)
AV2 IN
AV1 IN
FIXED AUDIO OUT
CAUTION
4A 125V
FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE 4A, 125V FUSE.
ATTENTION: POUR MAINTENIR LA PROTECTION CONTRE LES RISQUES D' INCENDIE UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE 4A, 125V.